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CONTENTS OF VOLUME XVI

I

II

III

IV

A NEGLECTED HETEROCLITIC NOUN

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It is for good reasons that the IE heteroclitic nouns, that is, the type Skt. *yakṛt*, gen. *yaknáḥ*, Gk. ἦπαρ : ἦπατος, Lat. *iecur* : *iecinis* (cf. *iecinoris*), arouse the special interest of linguists. Scholars have discussed the origin of this puzzling category of words, and have tried to enlarge the number of heteroclitic paradigms[1]. The methodological aspect of these attempts, it seems to me, needs a closer examination; but here I want only to point out a case which might be added to the list of heteroclitic words.

Among the most evident and most ancient examples of these, we meet with words for light, light-time, light-season, or the like: IE **ai̯er* : **ai̯en* in Av. *ayarə* : *ayṵ* 'day', *yarə* 'year', Goth. *air* 'earlier', Gk. ἔαρ 'spring', etc.; IE **u̯esṛ* : **u̯esen* 'spring' in Gk. ὥρα, Lat. *ver*, Skt. *vasantá-*, OCS *vesna*, etc.; Skt. *ahar* : *ahnáḥ* 'day'; IE **sāu̯el* : **sāu̯en* 'sun' in Skt. *sūryá-*, Gk. ἥλιος < ἀϝελιος, Lat. *sol*, Goth. *sauil*, OHG *sunna*, etc. For one reason or another, the bright light and light-time must have been very important for the Indo-Europeans of that extremely primitive period. Under these circumstances it seems surprising that we do not meet with a heteroclitic noun for the bright day-sky. This is all the more striking, if we consider the fact that the Indo-Europeans worshiped the day-sky most of all since the earliest times.[2] The question therefore presents itself whether the primitive IE name for the bright day-sky, that is, IE **di̯ēus*, Skt. *dyauḥ*, Gk. Ζεύς, etc., can be supposed to be a neglected heteroclitic noun.

As for the stem **di̯ēu-*, the original form must have been **dei̯eu*, from which also the adjective **dei̯eu̯ós* > **deii̯os* developed.[3] Can **dei̯eu*

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[1] See, e. g., H. Petersson, Studien über die idg. Heteroklisie (Lund, 1921); Zur Kenntnis der idg. Heteroklisie, in Lunds Univ. Årsskrift, N.S., Avd. 1, 18.7; E. Benveniste, Origines de la formation des noms en indo-européen (Paris, 1935).

[2] The god of the day-sky, too, is older than the sun-god. On the other hand, the Persians still worshiped the dome of the sky in historical times; cf. Her. 1.131: οἱ δὲ νομίζουσι Διί .... θυσίας ἔρδειν τὸν κύκλον πάντα τοῦ οὐρανοῦ Δία καλέοντες.

[3] See also J. Wackernagel and A. Debrunner, Altindische Grammatik 3.221–2 (Goettingen, 1929).

be the nominative of a heteroclitic word? It is true that most hetero-
clitics show an *r*-stem in the nominative; but other stems occur too,
e. g. an *i*-stem in Skt. *asthi* : *astnaḥ* 'bone', Gk. ὀστοῦν < *ὀστει-ον,
Hitt. *haštai*, an *l*-stem in Gk. ἤλιος, Lat. *sol*, etc. Beside the *r*-stem of
Gk. ὕδωρ, Hitt. *watar*, OHG *wazzar*, an *ā*-stem can be assumed in forms
like OCS *voda*[4]; and in Phryg. βέδυ there appears even an *u*-stem. Con-
sequently the analogous *u*-stem in IE **dei̯eu* is by no means opposed to
the assumption of an originally heteroclitic declension of this word.

But much more important is the other stem **dei̯en-*, which exists
beside **dei̯eu-*. The two stems are most certainly not the result of a
secondary enlargement by different suffixes of an earlier and shorter
stem. For there is no shorter stem, as for example in the case of Gk.
χειμαρ-(ινός) and χειμών < **ĝhei̯em-r-* and **ĝhei̯em-n-* beside **ĝhei̯em-*
in Av. *zyå* or Lat. *hiems*. Of course, IE **dei̯eu-* and **dei̯en-* can be simple
primary suffix variations; but there are some facts working against such
an assumption.

First of all, that **dei̯en-* is an *n*-stem is important; for it is known that
an *n*-stem in the oblique cases is the foremost characteristic of all
heteroclitic paradigms. So we should have to prove that in the very
beginning **dei̯en-* really was the oblique stem of **dei̯eu-*. In this con-
sideration it must be emphasized that both stems have the meaning
'day', originally 'day-sky', 'day-light': Skt. *divā* 'by day-time', Lat.
dies, OIr. *die* : Skt. *dina-*, Lat. *nūndinae*, etc. But the stem **dei̯en-*
has got this meaning only, while the later meaning 'sky-god' is restricted
to the stem **dei̯eu*.

To be sure, Kretschmer in his paper Die protindogermanische Schicht[5]
recognizes the stem **dei̯en-*, **din-* in some names of Greek and Italic
gods, which involves the assumption that **dei̯en-* had the meaning
'sky-god' also. Yet I am convinced that Kretschmer's whole theory of
Proto-Indo-Europeans is a mistake. There is no sufficient archaeologi-
cal evidence of it,[6] and the linguistic arguments with which Kretschmer
tries to prove his theory are more than doubtful. I cannot enter upon
this question here; yet I cannot avoid discussing Kretschmer's argu-
mentation so far as it concerns the stem **din-*. These cases form a
large portion of his arguments. On the other hand, it is these cases
which J. Friedrich,[7] who also is very skeptical of Kretschmer's theory,

[4] See J. F. Lohmann, ZSlPh. 7.372 ff.
[5] Glotta 14.300 ff.
[6] See J. Friedrich in Hirt Festschrift 2.222-3 (Heidelberg, 1936).
[7] loc. cit.

considers most probable of all. We shall see to what extent they deserve this evaluation.

According to Kretschmer, the Greek paradigm Ζεύς : Ζηνός, etc., is due to a proto-IE paradigm Ζεύς : *Τινός, etc., in which *Τινός would reflect the stem *din-. I do not suppose that many scholars will be inclined to accept this assumption. As a rule the declension Ζεύς : Ζηνός is supposed to have developed from the accusative Ζῆν, which became Ζῆνα by analogy with common Greek accusatives such as πόδα, χεῖρα. This explanation is so reasonable and so well backed by parallels that there really is no need to take refuge to a hypothetical proto-IE paradigm. Beyond this, I do not see how this paradigm Ζεύς : *Τινός can explain the vocalism of Ζηνός, etc. It can only explain the n-stem, but the η cannot be understood except by the influence of the accusative transformed into Ζῆνα. Nevertheless this assumption of Kretschmer's is gold as compared with his further assumption that even the declension of the interrogative pronoun τίς : τίνος : τίνι : τίνα is owing to the influence of the same hypothetical paradigm Ζεύς : *Τινός, etc. Such arguments need no refutation.

Instead we have to examine the way in which Kretschmer deals with the name of the Τινδαρίδαι. First of all, it is by no means necessary to assume that this name for the Dioskouroi had also the etymological meaning of 'Dioskouroi', that is, 'Tin's sons'. Like Μολίόνε it could be used for the Dioskouroi, even if it had a quite different etymological sense. On the other hand, the interpretation 'Sons of Tin (Zeus)' meets with a great difficulty from the very beginning: Τινδαρίδαι is a patronymic not from *Τιν, but from Τίνδαρος, which, according to Kretschmer, is itself a patronymic form derived from *Τιν. So Τινδαρίδαι would mean 'GRANDsons of Τιν'. Maresch,[8] who first interpreted Τινδαρίδαι as 'Tin's sons', tried to overcome this difficulty by assuming that in the beginning the Dioskouroi were called *Τίνδαροι, and that this name was changed into Τινδαρίδαι later on, when a singular form Τίνδαρος had become the name of the father of the Dioskouroi. In the syllable -δαρ- Maresch recognizes a patronymic suffix that he thinks to be the same suffix as in Asianic place-names like Τορκονδαρα, Βρυγινδαρα, etc. But Maresch himself must admit that the function of the suffix in these names is, as he says, not clear. We can even say that it is entirely unknown. So the second part of Τινδαρ-, which is decisive for the etymology of the whole name, is an unknown quantity.

Kretschmer goes another way. He assumes two different words

8 Glotta 14.298–9.

Τίνδαρος, one of them with the meaning 'Tin's son', the other one a non-divine name which Kretschmer very convincingly explains after the pattern of names derived from place-names, e.g. Μίνδαρος : Μίνδη, Πίνδαρος : Πίνδη. That means, Τίνδαρος would be derived from a geographical name *Τίνδη. But, according to Kretschmer, this name was brought into connection with the supposed mythological name *Τίνδαροι of the Dioskouroi. In this way Τίνδαρος became the name of their pretended human father, and as a result of it the name of the Dioskouroi themselves got the patronymic form Τινδαρίδαι. This is a rather circumstantial explanation which one would not be inclined to accept but for very urgent reasons. Are there such reasons? I do not think so. The very idea of the myth demanded a name for the human father of the Dioskouroi; but then it is quite natural that they themselves were called after him. So there is no sufficient reason at all for supposing that Τινδαρίδαι means more than 'Sons of Tindaros'. Kretschmer's interpretation of Τινδαρίδαι meets also with another very definite difficulty. Adopting Maresch's opinion that *Τίνδαρος contains a patronymic suffix -δαρ-, Kretschmer compares this suffix with Etr. -tur, -θur, which is in fact a patronymic suffix; e.g., in lar : lar-θur, vel : vel-θur. The Etruscan suffix is perhaps a word for 'son', and related to Sumerian tur 'son'. Now there is an Etruscan proper name tinθur which Bugge had earlier explained as 'Son of Tin', the supreme Etruscan god; thus it is really alluring to compare Etr. tinθur with Gk. *Τίνδαρος. But Bugge's interpretation of the Etruscan name is hardly correct. The name appears also in Etrusco-Latin names like Tintorius, and we know that there was an Etruscan family with the name-stem tin-;[9] but we cannot assume that the members of that family called themselves the sons of the god Tin. We can rather assume the opposite, as will be explained below. At any rate tinθur is most likely a merely human name.

It is true, F. Altheim[10] tries to back the assumption of Etr. tinθur 'Tin's son' by interpreting Jūturna, the name of the Roman goddess, as 'belonging to the Dioskouroi', that is, as a derivative from *diu-tur 'Zeus' son'. According to Altheim, the latter, containing IE *di̯ēu- as its first part, was a hybrid Roman substitute for a truly and entirely Etruscan tin-θur. Now from an Etruscan inscription (Fabr. Suppl. 3.356) we have learned that in Tarquinii the Dioskouroi were called tinas cliniiaras 'Tin's sons' (clenar 'sons'), and in an interesting paper

[9] See below.
[10] Griechische Götter im alten Rom 10 ff., 27–8.

dealing with the inscription M. Hammarstroem[11] points out that this name does not strictly refute Altheim's hypothesis; for as *tinas cliniiaras* is attested for Tarquinii only, the Dioskouroi might have borne other names in other towns and districts of Etruria. This is true; but on the other hand, I also agree with Hammarstroem that *tinas cliniiaras* does by no means support Altheim's hypothesis, which without it is quite questionable, and not merely on the linguistic side. It therefore cannot be a support for an Etruscan word *tinθur* 'Tin's son' either.

But even if we were forced to admit the existence of this word, its comparison with a mythological Greek *Τίνδαροι 'Tin's sons', assumed by Kretschmer, would be prevented by a very decisive linguistic obstacle. For Etr. *-tur, -θur* always shows an *u*, which appears in Sumerian *tur* also (if this is related to the Etruscan word). In Latin names of this type we meet with an *o*, e.g. *Tintorius : tinθur, Numitor, Numitorius : Numa,* like Etr. *lar-θur : lar.* So, it is true, we are not forced to assume that the vowel of Etr. *-tur* was a real *u*. It might also have been a very close *o*, a sound intermediate between *o* and *u*, and we know that there was such a sound in Etruscan. But even in this case it appears entirely impossible that the Greeks or any other nation would have spelt such a close *o* as *a* or that it would have changed into an *a*. At any rate, the typical spelling of Mediterranean or Asianic words in Greek and Latin is either *u* or *o*, e.g. Lat. *īdūs* : Etr. *itus*; Lat. endings *-ō, -ōna, -ōnius* : Etr. *-u, -una*; Lat. *persōna* : Etr. *φersu*; Lat. *sporta* < Gk. *σπυρίδα*, borrowed via Etruscan; Lat. *cotōnea māla* : (pre-)Greek *Κυδώνια μᾶλα*; Gk. *ὀπυίω* : Etr. *puia* 'wife'; Gk. *πρύτανις* and *πρότανις* : Etr. *prθne, pruθne*; Asianic-Etruscan *Πυριματις : Ποριματις*; *hura : Oρas*; *muskkah : Μοσχας*; *Σουρα : Σωρα.*[12] Considering all these cases, the number of which can easily be increased, we should have to expect a form *Τιν-δυρος or *Τιν-δουρος, or *Τιν-δο/ωρος, if the second part of the word were really related to Etr. *-tur.* So the situation with Kretschmer's interpretation remains the same as with that of Maresch. The patronymic form of *Τινδαρίδαι* is an obstacle which cannot be removed except by very doubtful assumptions. But above all the meaning of the second part of *Τιν-δαρος, which would be decisive for the interpretation of the first part, could not be explained. So the whole interpretation is based on entirely unknown quantities. I do not think that such an etymology can prove anything.

[11] Der Name der Dioskuren im Etruskischen, in Studi Etruschi 5.368-9.

[12] See for more examples G. Herbig, Kleinasiatisch-etruskische Namengleichungen, in SBBayrAW, phil.-hist. Kl. 1914, 2nd article.

Finally, we have to discuss Etr. *tina, tinia*, the name of the supreme Etruscan god. This name also is traced back to proto-IE **din-* by Kretschmer. He even compares the variants *tinia* and *tina* with the variants of an *i*-stem in the OCS nominative *dĭnĭ* and a consonant-stem *din-* in the oblique cases *dĭne*, etc. So he comes to reconstruct a proto-IE paradigm **dinis* : **dines*, etc. This is another example of how eagerly Kretschmer avoids simple ways of explaining simple linguistic facts in order to prove his daring hypothesis. For there can hardly be any doubt that the OCS word only continues the IE *n*-stem **din-*, and that the nominative *dĭnĭ* is but a secondary form shaped by analogy with the opposite *noštĭ* 'night'. Mutual influences of words for 'day' and 'night' are quite natural and well known; e.g., Alb. *ditε* : *natε*, Lat. *diurnus* : *nocturnus*, perhaps also *diū* : *noctū*, Germ. *tags* : *nachts*; cf. also MHG *nehten* 'last night' < *nehti* by analogy with *morgen* 'tomorrow'. On the other hand, the variation *tina* : *tinia* has parallels enough in Etruscan itself: *θana* : *θania, hasta* : *hastia, vela* : *velia, hamφna* : *hamφnia, mutna* : *mutnia, θuplθa* : *θupltia*. So there really is no reason for tracing back the variants *tina* : *tinia* to a hypothetical proto-IE paradigm. Beyond this there is also a shorter Etruscan stem *tin, tinś*, which appears in *tinścvil* 'ἀνάθημα (?)' also; and this variation, too, has a parallel:

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θan   in   *θan-χvil* : *θana* : *θania* like

tin, tinś, and *tinś-cvil* : *tina*   : *tinia*.

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The mutual relations of these forms are not clear; they might well be of a different kind in the different cases.[13] Nevertheless it is evident that the variants *tina* : *tinia* : *tin-* are a matter of Etruscan word-formation, not the result of a proto-IE paradigm. And even if *tin-* was the original form of the stem, it would be very daring to identify it with IE **din-* 'day-sky, day'. It is well known that some names of Etruscan gods can be derived from the names of Etruscan families, and the stem *tin-*, etc., occurs as a family name also: *tin-θur, tinasi, tinś*, etc. The last word especially bears so close a resemblance to the religious name *tinś, tinś-cvil*, that a relation between them appears at least possible. It is impossible, however, that a man called himself by the name of the supreme god, called himself 'Zeus'. So the inverse question presents itself whether in this case, too, the god carries the name of a family whose special patron he was. I do not by any means say that this is

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[13] See E. Fiesel, Das grammatische Geschlecht im Etruskischen 58 ff. (Goettingen, 1922).

the real explanation. I only want to point out that there are possibilities of explaining the god *tinia*, etc., within the Etruscan language itself, and such possibilities must be taken into consideration before we are entitled to trace back an Etruscan name to a proto-IE word-stem.

Apart from this, there are other reasons which may warn us against such a procedure. First, Kretschmer's opinion about *tinia* presupposes the existence of the IE sky-god. Yet it is very doubtful whether the mythological personification of the sky was already achieved at that very early time which we should have to assume for Kretschmer's proto-IE period. Secondly, IE *din-* means the bright, shining sky, and at the proto-IE time supposed by Kretschmer, if ever, people must have been conscious of this meaning of the word. But if they were, would they have been able to transfer this word or this name to a god who, like the Etruscan *tinia*, was a god of the lightning and of the thunderstorm, that is, not a god of the bright and shining, but on the contrary of the dark and cloudy sky? Thirdly and above all, the reconstruction of a supposed proto-IE stock of words must not start from the etymology of proper names, the origin of which is unknown, and the etymological meaning of which is equally or even more unknown. The only sound and possible method of reconstructing a proto-IE vocabulary and grammar would be the one adopted by all investigations into the prehistoric stages of the development of a language; that is, the reconstruction must be based upon facts existing in the language in historical times. Now—and this fact must by all means be stressed— in NONE of the historical IE languages has the stem *din-* the meaning 'sky-GOD', or is it used as a name for the sky-god. This fact alone would be sufficient to refute Kretschmer's theory so far as it is based on the word-stem *din-*. For it would not be intelligible why the Indo-Europeans, if once they used *din-* for the sky-god, gave up this use entirely later on. From the fact that in historical periods of the IE languages *din-* lacks the meaning 'sky-god', we can draw but one conclusion: *din-* lacked this meaning from the very beginning. And Kretschmer's arguments are surely not strong enough to interfere with this conclusion.

On the other hand, the lack of the meaning 'sky-god' for the stem *din-* can easily be understood from the IE view-point, if at one time *dei̯eu* really was the nominative, and *dei̯en-* the oblique stem of a heteroclitic paradigm. For naturally the later meaning 'sky-god' sprang up for the nominative, and it is easy to understand that thereby the original paradigm split up, that the nominative *dei̯eu*, *di̯ēu(s)*

with the new meaning developed new oblique cases, while to the original oblique cases a new nominative was created. This is a typical development with heteroclitic nouns; cf. IE *ι̯edōr : *udnós (Hitt. watar : wetenaš, Gk. ὕδωρ : ὕδατος) > OHG wazzar : wazzars, etc., and Goth. watō : watins, etc. If the same development took place in our word also, it was only natural that the paradigm which developed from the oblique stem kept the original meaning 'day-sky' > 'day-light' > 'day', but did not share the secondary meaning 'sky-god' of the nominative and of the paradigm that arose from it.

Yet the oblique cases of heteroclitic nouns were accented on the last syllable and therefore had the nil grade of the root. Particularly important for our word are examples like OHG brunno 'well' beside Gk. φρέαρ, or OHG sunna 'sun' beside Goth. sauil, Gr. ἥλιος, etc. In both instances the n-stem has the nil grade of the root. If therefore *dei̯en- was the oblique stem of a heteroclitic paradigm, it must appear in the nil-grade form *din-.

Is this conclusion backed by facts? Let us look at the words derived from the stem *dei̯en-. In Sanskrit we meet with dina- 'day', which also shows the neuter gender originally peculiar to all heteroclitic nouns. Latin furnishes us with the well known example nūndinae or nūndinum 'period of nine days'. Nūndinae is undoubtedly a later form derived from nūndinum by analogy with kalendae, nōnae.[14] Nūndinum itself (< noundinom), as well as a pretended perendinum, is supposed to show the same·IE neuter *dinom as Skt. dina-.[15] But this assumption is questionable. First of all, it is rather doubtful whether there was an original noun perendinum at all, or only an adjective perendinus. The latter is suggested by the parallelism between forms of perendino- and those of crāstinus: perendino diē : crāstino diē, in perendinum : in crāstinum, diēm perendini (Gell. 10.24.9) : diē crāstinī. These parallels even arouse the suspicion that perendinus is no inherited or original word, but is derived from the adverb perendiē by analogy with crāstinus. It would not be surprising that a word for the 'day after tomorrow' was modeled after a word for 'tomorrow'. But not even in nūndinum is a primitive IE neuter *dinom beyond all doubt. The neuter gender of the word can as well be owing to the dvigu-type of this compound; cf. Skt. ṣaḍ-gavam 'six cows', tri-yugam 'time of three ages', Gk. τριώβολον, τετράδραχμον, ὀγδόδιον, Lat. trīduum, etc. Yet if we consider examples like Skt. ṣaḍ-gavam : gāuḥ, or ṣaḍ-arcam : r̥c- 'verse', we might

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[14] Stolz-Leumann 279.
[15] See Stolz-Leumann 222, 279.

be allowed to ask whether *nūndinum* contains the most primitive conso-
nantal stem **din-*, which, as we have seen above, occurs also in the
oblique cases of OCS *dĭnĭ* : *dĭne*, etc.   At any rate, *nūndinum* and *dĭnĭ*
are other examples for the nil-grade form of the stem.

A problem is Alb. *ditε* 'day'.   At the outset Kretschmer's[16] com-
parison of *ditε* with (pre-)Greek *τιτώ*, *Τιτάν*, *Τιθωνός*, etc., can be re-
jected.   This explanation is not better than Kretschmer's above-quoted
proto-IE suggestions.   Also Vasmer's[17] comparison of *ditε* with OHG
zīt 'time' must be rejected, since the Albanian word does not have the
meaning 'time'.[18]   Krahe[19] recognizes in Alb. *ditε* beside Skt. *dina-*,
etc., the same stem-variation as in Illyrian *Teate* : *Teanum*, *Delmate* :
Delminium.   But these cases are of too different character to be com-
pared with each other.   Most probable of all is Jokl's[20] explanation
that *ditε* is a special Albanian derivation with the suffix *-tā* from Alb.
dihet, *gδiń* 'it is dawning' (< **di-n-i̯o-*); cf. Tosc. *tε gδitε* 'day-break'.
Then *ditε* cannot be taken as a survival of IE **din(o)-* 'day'.   But this
stem has undoubtedly been preserved in OIr. *denus* 'spatium temporis'
tredenus 'triduum'.[21]   Finally **din(o)-* might be contained in OHG
lengizin 'spring', originally 'having long days'.[22]   In all these instances,
except Alb. *ditε*, the stem **dei̯en-* actually appears in the nil-grade **din-*.

On the other hand, we are left with but a very few and geographically
very restricted words showing the full-grade form **deino-*: Lith. *dienà*,
Lett. *diena*, OPr. acc. *deinan* 'day'.   Also Goth. *sinteins* 'daily' is sup-
posed to contain **deino-* 'day', combined with **sem-* 'one'.   But this
etymology, first suggested, if I am not mistaken, by Schweizer-Sidler,[23] is
at least very doubtful if we compare other Germanic words with *sin-* <
*sem-.   In OHG *sin-hīun*, OE *sin-hīwan* 'coniuges' *sin-* has the meaning
'in one, together', which does not fit Goth. *sinteins* 'daily'.   Nor does
OHG *sinfluot*, MHG *sintwāc*, *sintwaege*, *sintvluz* 'deluge', in which *sin-*
has developed the meaning 'great'.   An analogous development occurs
in OHG *sinawel*, OE *sinewealt*, ON *sívalr* 'entirely round'.   A further
group is NHG *Sinngrün*, OHG adj. *singruoni*, ON *sigrønn* 'eternally

[16] Glotta 14.309.
[17] Studien zur albanischen Wortforschung, 1, in Acta et Commentationes
Universitatis Dorpatensis 1.1, 1921, Nr. 10.
[18] See Walde-Hofmann, Lat. etym. Wörterbuch 350.
[19] ZONF 8.154 ff.
[20] In Walde-Hofmann, l. c.
[21] See Walde-Pokorny 1.774.
[22] See Brugmann, Grundriss 2².1.264; Walde-Pokorny, loc. cit.
[23] KZ 2.367.

green', OHG *sinnaht*, OE *sinniht* 'eternal night', and OS *sinlīf* 'eternal life'. Especially *sinnaht* and *sinlīf*, containing words for a concept of time, would no doubt be close parallels to Goth. *sinteins*, if it really contains **deino-* 'day'. But if it does, its original, its etymological meaning must be 'all days', 'every day', and this meaning does not agree with the meaning of *sinnaht* and *sinlīf*. According to these parallels we should be forced to assume for *sinteins* the meaning 'eternal day', which would be quite different from and not compatible with the real meaning 'daily' = 'every day'. Secondly, the Germanic compounds with *sin-* seem to keep the word category of their second parts: *sinvluot*, *sinlīf*, *sinnaht* are nouns; *singruoni*, *sinwel* are adjectives. In this respect, too, *sinteins* would not agree with the other examples, because it would be an adjective although containing a noun. Finally, there are no other examples of this type in Gothic, while in West Germanic and Old Norse compounds with *sin-* apparently were not isolated. All this taken together makes it improbable or at least very doubtful that *sinteins* contains **deino-* 'day'. As for the meaning, the adverb *sinteinō* means 'always', and a corresponding meaning 'perpetual' is suitable also in all passages in which the adjective *sinteins* occurs. In view of the fact that *sinteins* resembles the Gothic adjectives in *-eins*, it seems much more probable that *sinteins* is an adjectival derivative from *sin-* with the original meaning 'perpetual'.

I am, of course, not able to explain the suffix *-teina-* that would have to be assumed in this case. But must it be one single suffix? In NHG the concept 'always', 'permanently' can be expressed by *immer-fort*, *immer-zu*, *in einem fort*, *in einem zu*. Now the adverb and preposition *zu*, OHG *zuo*, OE *tó*, OS *tō* goes back to IE **dō*, belonging to a pronominal stem **de-*, **do-*,[24] which occurs also in adverbial groups of a temporal meaning: e.g. Lat. *quandō*, Skt. *tadā* 'then', *idā* 'now', etc. This suggests the question whether *sinteins* might go back to an adverb or an adverbial group **sem-dē*, **sem-dō*, or the like, with some such meaning as German *in einem zu*. From the above word or word-group the adjective *sinteins* could be derived by analogy with the adjective *aiweins*, which has the analogous meaning 'eternal'. A parallel to such a development would be Lat. *semper* 'always' < **sem per*, meaning something like German *in einem zu*. From *semper* Latin derived the adjective *sempiternus* by analogy with *aeternus*, *aeviternus* 'eternal'.[25]

[24] See Walde-Pokorny 1.769 ff.
[25] Stolz-Leumann 222.

It is admitted that the adverb of *sinteins* is a derivative *sinteinō*; but this can be a later form created after the original adverb had been forgotten. In Latin also a new adverb *sempiternō* was derived from *sempiternus*, although the original adverb *semper* was still very common. The Latin parallel makes an analogous interpretation of *sinteins* at least possible, while on the other hand the assumption that *sinteins* contains *deino- 'day' meets with the difficulties mentioned above. It is therefore better to drop *sinteins* as an example for the stem *din-.

The Baltic words (Lith. *dienà*, etc.) remain, then, the only examples of a full-grade form *deino-. Such a form is not surprising in itself. For it is a well known fact that the two stems of a heteroclitic paradigm can influence each other as to the ablaut. Gk. ὕδωρ, for instance, and Skt. *sam-udra-* 'ocean' have adopted the nil-grade form of the oblique stem *ud- (Skt. *udnáḥ*, etc.), while in Gothic the oblique *n*-stem *watō* shows the full-grade form, originally restricted to the *r*-stem *ẉedor. But in our word it is also remarkable that, if we set aside Goth. *sinteins*, the full-grade form *deino- appears only in the Baltic languages. That can hardly be accidental. It suggests that we have to do with a special Baltic innovation. Lith. *dienà*, etc., might be due to the influence of Lith. *diẽvas*, Lett. *dievs*, etc., which have the meaning 'god', but originally meant 'sky' also; cf. Lith. *diẽvo sunẽlei*, Lett. *dewa deli* 'sons of the sky' = Gk. Διόσκουροι. Note also the Finnish loanword *taiwas* 'sky'. At any rate, with the exception of the Baltic words, all instances show the nil-grade form *din(o)-, and among them there are very ancient examples, such as OCS *dĭne*, etc.

Now let us take a few typical IE heteroclitic paradigms:

> *ẉedor : *udnés 'water'
> *peẉor : *punés 'fire'
> *bhreẉar : *bhrunés 'well'
> *sāẉel : *sunés 'sun'.

I think an original paradigm *deẉeu : *dinés would agree splendidly with these types. So I venture the assumption that the stem-doublet *deẉeu- : *deẉen- goes back to a primitive heteroclitic paradigm. This is a hypothesis not capable of absolute proof, but I hope that it is worth consideration.

THE ENCLITIC EMPHASIZING PRONOUN OF THE THIRD PERSON MASCULINE AND NEUTER IN ARCHAIC IRISH

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In classical Old Irish the enclitic emphasizing pronoun of the third singular masculine and occasionally neuter as well as of the plural in all genders is *som*. Towards the end of the period, this is sometimes spelled *sum* or *sam*. Very rarely do *sem* or *sium* occur after palatal consonants. Though the vowel may vary, the final letter is almost always *m*. So far, only two exceptions have been noted and both are found in sentences written in the margin of the Würzburg Glosses by the main hand which may be approximately ascribed to the middle of the eighth century about fifty years later than the prima manus. In the one instance, Wb.9b7 reads *a thindnacul sa* 'his being delivered up', for which the editors of the Thesaurus Palaeohibernicus[1] suggest the correction *a tindnacul sa* or *a thindnacul som*, the second emendation being supported by *á anim som* 'his soul' in the same gloss. In the other instance, Wb.9b17 reads *a mbésa sa* 'their customs', where instead of *sa* one again expects *som*.

These two exceptions among innumerable examples with a final *m* may simply be scribal errors and that, indeed, may be here the correct explanation. But *sa* is also recorded in other sources, although the occurrences are very sporadic, since scribes copying from older MSS would naturally tend to substitute the form which was more familiar to them. It is, however, significant that the principal sources in which *sa* occurs are The Voyage of Bran and the Four Stories concerning Mongan, for these documents, belonging as they do to the Imrama or navigation group of stories, are probably at least a century earlier in date than the main hand of Würzburg. Hence, they may be expected to have preserved certain earlier features of the language in so far as these features have not been eradicated by later copyists. Unfortunately, however, neither of these documents has as yet been published in a critical edition. Kuno Meyer's text is purely eclectic, but his list of variants seems to indicate that, in several instances at least, *sa* rather than *som* was the reading of the archetype.

[1] 1.551, n.d., edd. W. Stokes and J. Strachan, Cambridge, 1901.

In The Voyage of Bran, Meyer, for example, prints *nís-n·aiccilled san* 'he would not converse with them', where *san* cannot be a mistake for *són*, which is neuter. Since, however, all of the MSS in his critical apparatus have *sa* or *sai*,[2] it may be inferred that *sa* was the reading of the archetype which was later altered into *san* by a scribe who no longer understood the form. Less certain is the sentence *Ba blédin don·arfás dóib buith and*, which Meyer renders: 'It seemed a year to them that they were there'.[3] Without regard to the syntax, *don·arfasa* in R as well as B, and *don·arfussa* in H may be construed as *ro*-preterite passive plural formations,[4] but, as Thurneysen suggests, *dóib* may have been incorrectly substituted in the archetype for the infixed pronoun *da* of the third plural, so that it may be possible to read *donda·ārfas sa*,[5] where *sa* refers to the pronominal infix.[6] The whole sentence might, therefore, be literally translated: 'It was a year that it had been shown to them being there'.

Linguistically as archaic as The Voyage of Bran are the Four Stories concerning Mongan which Meyer published in the same volume.[7] It is, therefore, not surprising to find several occurrences of *sa* among his variant readings as well as in the version of this text in MS H.4.22[8] with which Meyer was unfamiliar. Twice he prints *as·bert side* 'he said', but in one instance,[9] MSS H and H.4.22[10] read *sa*, whereas N and E have *som*, and in the other instance,[11] MSS U, H, and H.4.22[12] all read *sa*, whereas E alone has *som*. Similarly, *as·berad sium*[13] 'he would say' is only supported by B, for U and H.4.22[14] both read *sa*, which seems to indicate that *sam* in H represents an earlier form without a final *m*. But in a later passage we find *as·rubairt som*[15] 'he had said', where none of the MSS including H.4.22[16] furnishes any evidence for the variant *sa*.

[2] Cf. The Voyage of Bran 1.31, n. 3, edd. Kuno Meyer and Alfred Nutt.

[3] The translation does not bring out the force of the *ro* in the verb.

[4] Op. cit. 1.31, n. 37.

[5] Or *donda·adbas sa* without the *ro*; cf. *don·adbas*, the reading of L.

[6] The verb *do·adbat* 'shows' often infixes in the preterite passive a personal pronoun with dative function. Cf. R. Thurneysen, KZ 48.50.

[7] 1.42-58.

[8] ZfCPh. 18.414-9.

[9] Voyage of Bran 1.42, n. 23.

[10] ZfCPh. 18.415.

[11] Voyage of Bran 1.42, n. 31.

[12] ZfCPh. 18.415.

[13] Voyage of Bran 1.47, n. 13.

[14] ZfCPh. 18.416.

[15] Voyage of Bran 1.48.l. 1.

[16] ZfCPh. 18.417.

Until, therefore, a stemma has been established, the validity of every reading may be questioned; all that can be said for the present is that apparently enough evidence exists to make it reasonably probable that *sa* rather than *som* occurred in most of the foregoing examples in the archetype.

Fortunately, however, *sa* is also recorded in sources other than those heretofore mentioned. Among these, The Monastery of Tallaght[17] is by far the most important, since it was composed at a very early date, even though it has been preserved in a rather corrupt state. In this work there are three occurrences of *sa* where one might expect to find *som*. Twice the MS reads *as·rubart sa* (*sai*) 'he had said'[18] and once *cona·ralú sa* 'he should not drink'.[19] But since *som* is likewise found in this text,[20] it is impossible to say whether *sa* is a petrified form or a scribal corruption. However, the evidence furnished by The Voyage of Bran and the Four Stories concerning Mongan seems to indicate that in archaic documents *sa* and *som* were used interchangeably for the third person of the enclitic emphasizing pronoun.

Another possible example of *sa* occurs in the Echtra Conli[21] which, since it belongs to the navigation group of stories, may be said to be anterior in date to the main hand of Würzburg. At the very end of this tale, Conle is said to have sprung into a crystal boat after having conversed with the woman of the other world, and the eyes of his people could scarcely follow the navigation at sea that they performed. The narrator then continues: *Ní·aiccessa o sin i-lle* 'They were not seen from that time forth'.[22] The fairy woman was, however, invisible to all except Conle. The subject of *ní·aiccessa* must, consequently, be Conle and the boat. Though this is a conceivable interpretation, the emendation *ní·aicces sa* 'he was not seen' would seem to suit the context better, for the crystal boat is of slight importance in comparison to the fact that owing to Conle's departure his brother Art, as the next sentence states, is left all alone in the world. That Conle is really the subject of the verb is, furthermore, indicated by the readings in the oldest group of MSS, three of which read *nad·aicsed, ni·faici,* and *ni·haiced,* whereas only two MSS exhibit the apparent plural ending in *-sa.* If, however,

[17] Edd. E. J.. Gwynn and W. J. Purton, Proceedings Royal Irish Acad. 1911.115–79.

[18] Op. cit. 129. l. 11; 144. l. 12.

[19] Ibid. 145. l. 21.

[20] For instance, *laisim,* 145. l. 22.

[21] Ed. J. Pokorny, ZfCPh. 17. 193 ff.

[22] Ibid. 201.

in these instances *sa* is simply the alternative form of *som*, then all of the MSS are in agreement and the verb must, consequently, be singular and not plural. Hence, the proposed emendation *ní·aicces sa* 'he was not seen' is confirmed by the MS tradition and also does no violence to the sense of the passage in question.

In several other texts *sa* seems to be used with exactly the same meaning as *som*, but unfortunately these sources are sometimes corrupt or their context unclear, so that not too much reliance can be placed upon them. It is perhaps surprising to find no clear examples of *sa* in so archaic a document as The Martyrology of Oengus. Very uncertain, at all events, is the metrical line *ní·brúifem an núall sa* 'we will not forget to acclaim them',[23] since in the same quatrain there are three other occurrences of *sa*, all of which are instances of the demonstrative pronoun. Doubtful, too, is *focicertsa* in the Yellow Book of Lecan version of the Bruiden Átha which according to Kuno Meyer[24] is a scribal error for *fo·cicherr*, though it should be noted that in the recension printed from Stowe MS 992 *sum*[25] apparently replaces *sa*. Very corrupt also are the metrical lines *M'anmum*[26] *budein asbertsa*[27] *frim corpán casmar cetlach*, for the translation of the editor[28] 'My own soul said to my ... body(?)', assumes that the initial words of the foregoing passage originally were *M'anim fodein as·bert si*. But since *er* in *asbertsa* is an expansion, it is entirely possible to read *as·biurt sa* 'I said', or *as·bret(h) sa* 'it was said'. If the second emendation is correct, then *sa* might again be the variant form of *som*.

[23] So rendered by W. Stokes, Martyrology of Oengus the Culdee, Henry Bradshaw Society 29. v. 304, London, 1905. It should, however, be noted that B omits *an* before *núall sa* which occurs again without the preceding *an* (19.v.54) where Stokes translates it 'this lamentable thing', as if *sa* were the demonstrative pronoun. In his critical apparatus he suggests that the definite article has been left out for metrical reasons, and cites in support the *noib-sa* of Ml. 69a21. But the MS clearly has the definite article, for it reads *annoibsa* 'this holy thing'. Fortunately, however, *núall sa* without the preceding definite article is recorded also in R. Thurneysen's Zwei Versionen d. mittelir. Legende von Snedgus und Mac Riagla 20. It is there glossed by *oll inn-so* and *mór inn-so*, which indicates, if the glosses are trustworthy, that *sa* is the demonstrative pronoun. But this construction can be explained only as a poetical license. It is, therefore, a question whether *sa* in these instances is not perhaps after all the enclitic emphasizing pronoun.

[24] Fianaigecht xix.

[25] Rev. Celt. 14.243.l.49.

[26] B² reads: *M'anmaim.*

[27] B² reads: *atbertsa.*

[28] J. Strachan, An Old-Irish Metrical Rule, Ériu 1.196.

Even if the occurrences of *sa* in the preceding paragraph were left out of consideration on account of their equivocal nature, at least the evidence furnished by other sources, such as The Voyage of Bran and The Monastery of Tallaght, seems to indicate that in archaic Irish *sa* was employed as a by-form of *som*,[29] nor was there apparently any distinction made between them in usage or meaning. It is regrettable that the material is so scanty, but apart from a few sporadic survivals, *som* completely supplanted *sa* in the course of time as the enclitic emphasizing pronoun of the third person masculine and neuter. Probably *sa* was no longer used because there was an urgent need of distinguishing among several homonyms. It could, for example, be easily confused with the demonstrative pronoun *sa*.[30] But an even more decisive factor was doubtless its formal resemblance to the enclitic emphasizing pronoun of the first singular, which in archaic Irish was *se*,[31] but which was changed to *sa* during the classical period. Since, therefore, the first and third singular came to be identical, it is only natural that differentiation should have set in. This process was, moreover, furthered by the fact that the third person already possessed an alternative form with a distinctive termination of its own. Hence, it is not surprising that in the third person *som* replaced *sa*, which, in turn, survived in the first person as a later development of *se*. But in archaic Irish, at all events, *sa* and *som* seem to have been employed interchangeably as the enclitic emphasizing pronoun of the third person masculine and neuter.

[29] The published legal documents seem to contain no instances of *sa*. The apparent exception, *di·ren se* 'he pays', is a mistake for *di·ren side*, which (misprinted *diren se de*) occurs somewhat later in the same text. Cf. 'Bech Bretha', Ancient Laws of Ireland 4.198, 202.

[30] Also spelled *so, se, seo,* and *sea*.

[31] Cf. R. Thurneysen, KZ 48.50, 51. In this article Thurneysen relates *se* to the pronominal stem *siǫ-*, whereas Pedersen, who formerly at least believed that the oldest form of the first person was *sa*, identifies it with Greek *ǒ*, Sanscrit *sa* 'this'; cf. VGKS 2.138. Although Pedersen's etymology of the first person may no longer be tenable, the third person *sa* might very easily be connected with *ǒ* and *sa*.

THE PLACE CONCEPT IN CHINESE

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[An attempt to show that the idea of unspecified place is not a matter-of-course concept, but an artificial abstraction unknown to many languages outside modern Europe.]

Among those languages which have been reduced to writing, none perhaps affords such a direct insight into the origins of the more complex forms of human speech as does Chinese, with its astonishingly simple and immediate methods of expression. No other highly cultivated literary language gives the student such a feeling of getting near to the very roots of verbally formulated human thought.

Nevertheless, I believe that on the one hand the Chinese modes of expression have undergone in many cases a greater evolution and elaboration of the original concepts than may appear at first sight and that on the other hand the basic meanings of many apparently abstruse forms of other languages are obscured only by a thin overgrowth of metaphor, of which we seldom become conscious unless we delve into the historical evolution of their meanings. We may expect to gain from Chinese a particularly large flood of light upon the primitive processes of speech formulation in general, but it is advisable to check the conclusions drawn from it with all the other languages in which we can find similar phenomena. Otherwise, we can never be quite sure that we have not misinterpreted the Chinese phenomena, transparent as they may seem.

As an illustration I select here the grammatical applications of the word so^3, which is commonly rendered by 'place' in our Chinese dictionaries. Followed by a verb, however, it must usually be translated by 'that which' or 'he, they who' (plus the verb, in a passive sense if its nature permits) or simply by the past passive participle of a transitive verb or by the active participle of an intransitive verb. For example:

so^3 $yü^4$ 'that which is desired' = German 'das Gewünschte', Latin 'desideratum', '(the) desire'.

(wo^3-$chih^1$) so^3 $ssŭ^1$ '(my) thought-of (person or thing)', '(the person or thing) of which [= whereof] I am thinking'.

17

Separated from the verb by a word having 'prepositional' force, it may be rendered by the relative 'where' plus a preposition, e.g.:

pi³-chê³ so³   i³   tso⁴   tzu⁴
pen   which tak(ing) make letters = 'the pen WHEREWITH we write'.

Now, in the Semitic languages we find a place and time prefix *ma-* which at the same time forms the passive participles of transitive verbs and the active participles of both transitive and intransitive verbs. For example, in Arabic:

kataba 'to write'; *ma-ktab* 'place of writing, school'; *ma-ktûb* 'written', also 'letter, epistle'.

šariba 'to drink'; *ma-šrab* 'drinking place'; *ma-šrûb* 'drunken', also 'drinkable'.

In these 'first' or basic forms the second root vowel is different for the place-noun and the participle. But in all the derivative (2d to 15th) forms the same word serves for both functions, e.g.:

ḫaraǧa 'to go out'; 4th (causative) form *aḫraǧa* 'to bring out'; *muḫraǧ^un* 'place whither or time wherein something is brought out' and also 'brought out'; *muḫriǧ^un* '(he) who or (that) which brings out'.

The place-word *maḫraǧ^un* formed from *ḫaraǧa* means not only 'exit, place by or from which one goes out', but also 'the act of going out', as a full equivalent of the regular 'infinitive' or verbal noun *ḫurûǧ^un*. In Aramaic this derivative is even the regular form of the 'infinitive'.

In Hebrew the original identity of all the forms having the prefix *ma-* (whether with its original *a* or one of its several secondary modifications) is still more evident than in Arabic. I cite at random a few of the countless examples:

zâḇaḥ 'to sacrifice'; *mi-zbê^aḥ* (<*ma-zbiḥ*) 'altar'; *m^e-zabb^eḥ-îm* [pl. of participle of intensive (pi'êl) form] 'sacrificing'—1 Kings 8.5; Chron. 30.22.

qûm 'to stand up'; *mâ-qôm* '(standing) place'; *mê-qîm* (<*ma-qîm*) 'raiseth up'—1 Samuel 2.8 [lit. '(is) raising', participle of causative (hiph'îl) form].

Of *mâḵar* 'to sell' the Old Testament offers no example of any participle. But its 'nomen loci' *mi-mkâr* occurs as a practical equivalent of the passive participle and the noun of action:

'that which is sold' (Lev. 25.25, 28, 33; Ezekiel 7.13), 'ware' (Nehemiah 13.20);

'(action) of selling, sale' (Lev. 25.14, 27, 29, 50); and even 'proceeds from a sale': 'that which cometh of the sale' (Deut. 18.8).

These references include all the passages in which *mimkâr* occurs. None of them exhibits more than an incidental sense of place or time. In the two cases (Lev. 25.27, 29) in which the idea of time is involved, it is conveyed rather by the preceding word 'year(s)'. The same is true of very many other substantives in *ma*-, such as *ma-'ᵃkal* 'food' (cf. *ma-'ᵃkîl* 'feeding', hiph'îl participle), *ma-lqôᵃḥ* 'booty', *mizmôr* 'psalm', *miṣwâh* 'commandment' (cf. pi'êl part. *mᵉ-ṣawwâh* 'commanding'), from *'âkal* 'to eat', *lâqah* 'to take (away)', *zimmêr* 'to sing', and *ṣâwâh* 'to command', respectively.

The plural of *merḥâq* 'distant place', *ma*-derivative of *râḥaq* 'to be far away', is rendered by 'far countries' in Zechariah 10.9, but its use cannot be distinguished from that of a participial adjective in Proverbs 25.25:

mê-'ereṣ merḥâq 'from a FAR country'

and in 2 Samuel 15.17 the place concept must be reinforced by the word 'house': *bêt ham-merḥâq* lit. 'house of the distance', which the King James version renders 'a place which was far off'.

Green points out (Hebrew Grammar §191.5) that *môṣâ*, from *yâṣâ* 'to go out', means 'the act, place, and time of going forth' and 'that which goes forth'; *môšâb*, from *yâšab* (< *wašab*) 'to sit, dwell, sojourn', means 'the place and time of sitting or dwelling' as well as 'they who sit or dwell'. And he remarks concerning these forms with the prefix *ma*-: 'These different significations blend into one another in such a manner that it is not always easy to distinguish the precise shade of meaning originally attached to a word; and not infrequently more than one of these senses co-exist in the same word.'

There can be no doubt, too, that the sense of agent or instrument which some derivatives in *ma*- assume is merely an outgrowth of their participial force, just as a 'scraper' is either '(a person) who scrapes' or '(a tool or machine) with which (that person) scrapes'.

That the original significance of the *ma*- in the Arabic passive participle of the first or basic form *ma-ktûbᵘⁿ*, *ma-šrûbᵘⁿ*, was '(place or time) where' and that it was only later extended to the domain of a passive participle corresponding to the first or BASIC form seems to me amply proved by the fact that in the other Semitic languages—with the exception of Akkadian, which has no passive participles at all—*m(a)*-, as a PARTICIPIAL prefix, is confined to the participles of the DERIVED forms. Thus, the passive participle of Hebrew *kâtab* 'to write' is *kâtûb*, which corresponds to Arabic *ma-ktûbᵘⁿ*. It will be noted, furthermore, that, save for this secondary Arabic form of the type *ma-ktûbᵘⁿ* 'written', the

participial prefix $m(a)$- itself does not imply any distinction of voice in
any Semitic language. As in Chinese, the voice depends purely upon
the nature of the verb. The variation of the Semitic second root-
vowel to differentiate the voices was no doubt subsequently patterned
after the vocalism of the finite forms.

Striking as the association between the concepts of 'where' and
'participle' are in both the Chinese and the Semitic languages, it might
still not pass for more than a remarkable accident if we did not find the
very same association in languages equally distant from those two,
namely certain Indian languages of Mexico and the United States (and
no doubt also in many other Amerindian tongues):

In the Otomí-Pame family of Central Mexico, embracing Otomí,
Mazahua, Matlatzinca, Ocuilteca, Pame, and Jonaz, we find a prefix
ma-[1] forming words that express time and place, but at the same time
also the concept of active or passive participle, according to the transi-
tive or intransitive character of the verb. Thus, in Otomí, ma- occurs
as the first element of many native place names[2] and is combined with
all kinds of verbal and nominal roots to express the place or time in
which the thing signified by those roots is done or is to be found. Thus:

hũdi 'to sit'; ma-hũdi 'sitting place', meaning both the 'seat' of the
     body and a 'seat' made or selected by man.

šũi 'to be dark'; ma-šũi 'night'.

šẽi 'to dig'; ma-šẽi 'digging, excavation, hollow'.[3]

'yũts'i 'to fill, irrigate'; ma-'yũts'i 'fertile or irrigated place.[4]

The ma- of ma-pũni 'disappearing place, west' corresponds perfectly
to the ma- in Arabic ma-ġrib[un] 'west'.

These same forms in ma- are also extensively used as participles, so
that ma-pũni can also mean '(having) disappeared' or '(habitually)
disappearing', and the forms cited above may be rendered by 'seated',
'darkened', 'dug, excavated' and 'filled, irrigated', respectively. From
such a root as ho 'to be(come) good' the form could naturally have only

[1] There is, of course, no intention to assume etymological kinship with the
Semitic prefix ma- in spite of phonetic and semantic identity.

[2] Most of these place-names are now used only in speaking Otomí. The
Spanish conquerors generally adopted the Aztec equivalents and these have
become the official Hispano-Mexican designations of all but the smallest Otomí
settlements.

[3] Also the Otomí name of Taxquillo (from Aztec Tlachco 'Ball Court') in the
northern extremity of the State of Hidalgo, just off the Laredo Highway.

[4] Also the Otomí name of Actopan (from Aztec Atocpan 'Fertile Land'), south
of Taxquillo, on the Laredo Highway.

a 'non-passive' meaning: *ma-n-ho* '(having) become good' = 'good'. From *ho-gi* 'to make good', a suffixal extension of *ho*, the place-form would mean 'made good', which, however, amounts to the same thing as '(having) become good', that is, simply 'good'.

For reasons which will appear later on, it should be mentioned here that *ma* combines with *te* 'what?' to form *te-ma* 'which, what?', used with a following noun.

In Kahita, the Ute-Aztecan language of the Yaqui and Mayo tribes of Sonora and Sinaloa, the words formed with the place and time suffix *-po* likewise serve as participles and even verbal nouns:

> *hinu* 'to buy'; *hin-wa* 'to be bought'; *hinwa-po* 'buying place' and 'that which is bought, merchandise'.
>
> *uba* 'to bathe'; *uba-wa* 'to be bathed'; *ubawa-po* 'bathing place, bath' and 'action of bathing, bath'.

In Southern Paiute, a remote (Shoshonean) relative of Nahuatl, the suffix of the active participle is *-ti̇*, while the place suffix used with verb and noun stems is *-ti̇'* or *-ti̇a*. See Sapir, The Southern Paiute Language, §25.4.a, 6.a.

All the formations thus far discussed may function occasionally, and some even function regularly, as active substantives, just as 'scriptura, écriture, Schreiben, writing' embody the double sense of the 'act of writing' and the 'thing written'.

Modern colloquial Greek and some vulgar or dialectal forms of the Germanic languages illustrate still another interesting aspect of the Chinese use of *so³*, and suggest the logical link between the idea of 'where' and the participial concept. In those languages the word for 'where' is the normal equivalent of our relative pronouns after any antecedent whatsoever. E.g.: Colloquial Greek τὸ σπίτι ποῦ βλέπεις = Bernese German *ds Hūs wo du gsiehsch* = 'the house where [i.e. which] you see'. ὁ ἄνθρωπος ποῦ εἶλθε = *dr Mā wo gcho isch* = 'the man where [i.e. who] has come'.

In view of such usages there can be no logical obstacle to assuming the identity of the Semitic local and participial prefix *ma-* with the interrogative root *ma*, which occurs in all the Semitic languages, e.g. Arabic *mâ* 'what?' *man* 'who?' Indeed, Green (Hebrew Grammar §191) asserts flatly: 'The letter *m* [of this prefix] is a fragment of the pronoun *mî* "who" or *mâ* "what".' And as I have noted since writing the foregoing, Brockelmann calls the formation in *ma-* 'really an abbreviated relative clause'.

In the absence of records to the contrary it may be supposed that

the constructions quoted above from Greek and Swiss German arose
only in a recent stage of those languages. But, if so, they no doubt
reflect thought processes which were inherited from the most remote
ages and did not happen to gain the ascendancy among the dominant
modes of expression until a few centuries ago. Nothing is more at the
mercy of the whims of fashion and public favor than language, and
there is scarcely a single linguistic phenomenon that has not passed
through several cycles of alternating vogue and discard in some part of
the world.

On the other side, it is well known that the concepts of 'place' and
'where' are closely associated in many languages the world over. In
Aztec or Nahuatl, to cite only one example, the place and time suffix
-*kan* is identical with the independent interrogative adverb 'where?'. In
Cora,[5] the closest relative of Nahuatl, this same suffix -*kan* forms the
only participles which that language possesses. E.g.:

ne 'to come out, appear'; *n(e)a-kan* 'appearing' or '(which has)
appeared'.

nuiwa 'to be born'; *nuiwa-kan* 'born'.

ta-viḥte 'to adorn, beautify'; *na-viḥti-kan* 'adorned, beautiful' (cf.
Preuss, Grammatik der Cora-Sprache §17, in the International
Journal of American Linguistics 7.1–2).

In view of this series of observations it seems hardly an accident that
the Chinese *so³ i³* and *so³ yü²* can be translated by 'whereby' and 'where-
with', German 'wodurch' and 'womit'.

Those Sinologists who have adopted the entirely unhelpful practice
of giving the substantive 'place' as the most literal translation of *so³*
in the construction under discussion seem to overlook the fact that the
normal position of the object is AFTER the verb, not before it, regardless
of whether the verb is used in what is from our viewpoint a strictly
verbal sense or as the equivalent of one of our prepositions, such as *i³*
or *chiang¹* 'tak(ing)' or *yung⁴* 'us(ing)' = 'with', *wu² yu³* or *mei² yu³*
'not having' = 'without'; and, on the other hand, that *so³* in that con-
struction occupies the same position BEFORE the verb which is peculiar
to interrogatives, e.g.:

ho² wei² tsê² min² fu²
what do then people submit = 'by doing what can I [or one] make
the people submissive?' or 'What must I do to make the people submis-
sive?'

[5] Spoken by the Cora tribe inhabiting the western slope of the Sierra Madre
along the eastern boundary of the State of Nayarit.

It is true that there is but a short step from 'place' to 'where' in such Chinese constructions as

so^3 $kuei^3$ 'a PLACE (to) return (to)' = '(a place) WHERE (one may) return'

and thence to 'that [or he] to which [or whom] (one may) return'. Nothing could seem more reasonable, then, than to suppose that the idea of 'place' was the original basic meaning of so^3 from which the concepts of 'where' and 'which' developed subsequently. This view appears strengthened by the fact that our bilingual Chinese dictionaries usually give the word 'place' as the very first definition of so^3.

Notwithstanding these considerations and others which might possibly be adduced from modern Chinese usage, I believe that we have seen enough of the conditions in other languages to justify the suspicion that here again we are allowing ourselves to be deluded by the easy assumption that the Chinese mentality is so utterly different from ours that we are sure to guess it if we only hit upon that mode of expression which seems most unlike our own. In addition, we are subject to an illusion concerning the nature, origin, and antiquity of our own occidental words for 'place'.

At first sight, the idea of 'place' in general, that is, unassociated with any particular action or posture, might appear to be one which man must have naturally conceived at a very early time. But in reality, this idea is of a more abstract nature than that of the elemental emotions. A 'place' unassociated with some specific action or position of some particular being or object is a mere mental picture, an 'idea' in the Platonic sense. Now, it is well known how poor the languages of the more primitive peoples are in abstract terms. To these, of course, belong also the earlier stages of the Indo-European languages.[6] In their historical, that is, recorded, stages the Indo-European words for 'place' have already, at least in part, acquired an abstract value, but I know of no Indo-European word for 'place' which does not still betray to the linguist its original connection with some specific act or position. In other words, there are terms for 'stopping-place', 'standing-place', 'eating-place', 'living-place', 'grazing-place', etc., but none for 'place' in the abstract.

In their more 'advanced' stages, some of these terms have discarded their concrete connotation and been reduced to mere expressions of

[6] Consider what a large field such Latin words as *rēs* and *fidēs* must cover. The post-classical *'legalitas'* had to wait for a feudal society to infuse into it the now perfectly familiar notion of 'loyalty'.

'place' dissociated from any particular act or position. Such are Goth. *staþs*, OE *stōw*, German *Stelle*, Archaic Lat. *stlocus* (whence *locus*), Skt *sthalam*, Gr. στάσις, Slav. *stanŭ*, etc., all derived from the root **stā* 'to stand' and all originally meaning 'standing-place'.

Similarly, the bare verbal substantive was often made to serve as its own 'nomen loci', like that for 'bath' and 'station' in nearly all modern European languages. Many words like German *Tränke*, *Schenke*, English *dump*, *drive*, which were originally nouns of action, have come to be more or less exclusively place-nouns. OIcel. *oddr*, OE *ord*, OHG *ort*, whence NHG *Ort* 'place', meant 'peak, point, corner'. Gr. τόπος is thought by some to be related to Lith. *tèk-ti* 'to stretch out' and hence to have meant originally 'place where someone or something stretches out'.

So great has been the dearth of genuine expressions for 'place' IN THE ABSTRACT that our occidental languages have sometimes resorted to the most peculiar semantic leaps in their efforts to fill the demand created by the growth in abstract ways of thinking. No word for 'place', perhaps, has enjoyed such wide acceptance in European languages as that which began as Gr. πλατεῖα (ὁδός) 'broad road, street', passed over into Latin as *platea* and became *place* in French and (Norman) English, *piazza* in Italian, *plaza*[7] in Spanish and *Platz* in German, first with the meaning of a literally 'concrete', or at least paved, city *square* or *court*, but eventually coming to signify 'place' in the abstract. In the Romance languages it competes with the descendant of Lat. (*st*)*locus* (It. *luogo*, Sp. *lugar*, Fr. *lieu*).

It is, I believe, hardly venturesome to affirm that these were the only ways of expressing 'place' in Indo-European. To state it in other terms, the Indo-European never felt the need of expressing the idea of 'place' except IN CONJUNCTION WITH SOME SPECIFIC ACTIVITY OR POSITION, and then he naturally used one of the three forms described above: (1) the mere noun of action ('bath' type); (2) the place-noun derived from the proper verb by means of the available place-noun affixes ('auditorium' type); (3) occasionally, a word designating some 'concrete' shape, such as a point or corner ('Ort' type).

This is also the situation we find in the Semitic and—so far as my knowledge reaches—the Amerindian languages. In these we seek in

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[7] In Italian and Spanish the meaning 'town square', 'market place', '(military) headquarters' still predominates, but in French the word 'place' has at least all the senses of the English word.

vain for a genuine term for 'place' IN THE ABSTRACT. True, the current Semitic dictionaries offer a great variety of words for 'place', but upon closer examination we discover that every single one of them is a 'nomen loci' formed with the place prefix *ma-* and the verbal root appropriate to the situation. The Arabic *maḥall* is the most common word for 'place' in the languages which have borrowed it (Turkish, Persian, the Tartar languages, Hindostani, etc.), and in Modern Arabic it is possibly used most frequently in the abstract. But in view of the co-existence of *ḥall* 'to stop, halt', its original meaning of 'stopping-place' is clear. Other Arabic words commonly given for 'place' are *ma-kân* and *mu-qâm* or *ma-qâmah*, which originally mean 'being-place' and 'standing-place', respectively.

Anyone who doubts the extremely abstract nature of the general concept of 'place' need only attempt to convey this idea to an Otomí, a Nahuatl, a Zapoteco, a Maya, or, I imagine, almost any other Amerindian, Polynesian, or African aboriginal. I, for one, have long since given up the hope of making any Mexican Indian grasp this concept, familiar and natural as it appears to us. Just as they are normally incapable of referring, for example, to a part of the body or a relative without a possessor, so the idea of 'place' is manageable for them only when it is filled with the concept of some action or position. The Spanish word *lugar*, more or less modified to fit the native mouth, is now widely used by those Mexican Indians whose contact with occidental culture has been strong enough to make them conscious of a need to express certain abstract notions for which their own languages offer no fitting terms, just as they have borrowed Spanish words for utensils, articles of clothing, animals, and other objects introduced by Europeans.

As in the Semitic languages, such words as are given for *lugar* (without qualification) in the dictionaries compiled by the Spanish padres and other students of the native languages are, to my knowledge, all either verbal roots combined with a place affix, such as Nahuatl *tḷa-koyo(n)-yan* 'dug place, excavation', from *tḷa-* 'something', *koyonia* 'to dig', and the place suffix *-yan*; *ye-yan-tḷi* 'being-place', from *ye* 'was', *-yan*, and the originally demonstrative suffix *-tḷi*; or else simple words designating some specific kind of place, like Maya *cah*, which really means 'town, village'.

This does not mean, however, that these languages have no abstract words at all, as has sometimes been supposed. All of them, I believe, have terms for elemental feelings such as love, shame, and happiness,

and for abstract qualities like goodness, strength, and dryness. Indeed, Nahuatl and Maya have an astoundingly large number of wholly abstract terms, though I strongly doubt that they would be adequate to render Plato, as some enthusiasts have asserted.

On the other hand, I venture to say, on the basis of a knowledge of several widely different families, that there is no American Indian language that lacks a proper word for 'where?'.

Bearing all the foregoing in mind, let us now re-examine the nature of the Chinese so^3-construction. It would be strange indeed if among so many languages Chinese were the only one that should have proceeded from the concept 'place' to the concept 'where' rather than from 'where' to 'place'. Actually, one finds that a rendering of so^3 by 'where' in the vast majority of cases comes much nearer to yielding an English translation intelligible at first sight than if we render it by 'place'. In fact, the mechanical substitution of the latter usually produces a succession of words hardly easier for the uninitiated to understand than the Chinese sentence itself. Even $kung^1$ so^3, which Giles translates 'the place where the duke is' could just as well be rendered by 'the duke's whereabouts'. If the English New Testament can say 'The Son of Man hath not *where* to lay his head', I see no reason why the Chinese should not actually mean 'Heaven Son's where (to hunt)', when they say $t'ien^1$ $tz\breve{u}^3$ $chih^1$ so^3, which Giles renders by 'the place for the Son of Heaven (to hunt in)'. Wu^2 so^3 pu^1 $tsai^4$ lends itself equally well to the translation 'there-is-no where (that it) is not', as to Giles' 'there is no place where it is not'. Ni^3 yu^3 so^3 pu^1 $chih^1$ 'you have (that) where(of) you do not know' corresponds quite well, except for the use and position of the pronouns, to Swiss German *es het öppis wo du nüt wüssch*, literally 'it has something where thou not knowest' = 'there is something of which you do not know'. And 'I not know his where be(ing)' for wo^3 pu^1 $chih^1$ $ch'i^2$ so^3 $tsai^4$ is surely more intelligible as a word-for-word translation than 'I not know his place be(ing)'.

Finally, as in the case of the Semitic and Amerindian lexicons, the very number of alleged terms for 'place' offered by the English-Chinese dictionaries must at once arouse strong suspicion in us regarding their genuineness. Thus, a small pocket-dictionary published in Shanghai in 1929 gives no less than nine simple words and seven two-syllable compounds for 'place'. This clearly betrays the embarrassment of the author in finding adequate equivalents for such an abstraction. No doubt a few of the Chinese terms—including also occasionally so^3—do

tend toward a considerable degree of abstractness, but most of them are obviously little more than makeshifts, while others are clearly of the 'Ort' or 'bath' type. For example:

ch'u[4] 'to dwell, to be in (such and such a condition)'.[8]

chü[1] *ch'u*[4] 'dwell(ing)-be(ing)'.

chu[4] *chih*[3] 'dwell(ing)-boundary'.

ts'un[1] 'village'; *ch'êng*[2] 'city wall, city' (cf. Maya *cah* above).

chih[2] *li*[4] 'duty stand' = 'official position'.

ti[4] *fang*[1] 'earth-square'.

chieh[2] *shih*[4] 'street market(place)'.

In short, like other languages which do not share our pronounced European penchant for reducing the most concrete concepts to mere 'ideas', Chinese still possesses no one single word actually signifying 'place' in the abstract and capable of being used under all the most varied circumstances of which our word admits: there is a specific word to fit each individual concrete circumstance.

The testimony adduced above from other languages demonstrates, I believe, that even *so*[3] does not really constitute an entirely valid exception to this statement. Starting with the basic sense of 'where', it extended its sphere in one direction to that of '(that) which' and in the other to the occasional meaning of 'place'. Unless we admit 'where' as the basic meaning of *so*[3], we are forced to conclude that among so many 'unprogressive' languages Chinese alone has from time immemorial possessed no genuine single word for 'where' like Nahuatl *kan*, Otomí *habü*, Maya *taba, tah*, but has always contented itself with such circumlocutions as *ho*[2] *ch'u*[4] 'what dwell(ing)' = 'what place'[8] and *an*[1] *tsai*[4] 'rest-(be) in'.

As it happens, however, there are within the Chinese language itself still more direct and cogent evidences of the originally interrogative sense of *so*[3]. In the Chinese Classics there occur passages wherein *so*[3] alternates with a recognized interrogative in the two members of that parallel type of syntax so common in the oriental languages in general. Thus, one finds in the sayings of Mencius a series of exactly parallel phrases, one of which reads:

Pu[1] *chih*[1] *luan*[4] *so*[3] *tzŭ*[4] *ch'i*[3],   *tsê*[2] *pu*[1] *nêng*[2] *chih*[4] *chih*[1].
(If he) not know disorder where-from arises, then not can correct it.

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[8] *Ch'u* now means 'to dwell' in the 3rd tone and 'place' in the 4th, but both are written with the same character, so that there can be no doubt that the tone distinction is secondary.

Here, I translate *so*[3] by 'where' unhesitatingly and with every justification, for the preceding parallel phrase runs:

$$Sh\hat{e}ng^4 \quad j\hat{e}n^2 \quad i^3 \quad chih^4 \quad t'ien^1\text{-}hsia^4 \quad wei^2 \qquad\qquad shih^4,$$
(If)   holy   man   take   govern   empire   make (it his) business,

$$tang^1 \quad ch'a^2 \quad luan^4 \quad ho^2 \quad tz\breve{u}^4 \quad ch'i^3,$$
must   examine   disorder   what-from   arises.

And, finally, there are other words whose use exactly parallels that of *so*[3] as a quasi-relative pronoun. Thus *yu*[1], a comparatively rare classic word, is defined in the Chinese-English dictionaries by 'whereat, whereby, which'. Here are some typical examples of its use with Giles' free translation and what I consider the literal meaning:

$$Fu^2 \qquad yu^3 \quad yu^1 \qquad\qquad kuei^1$$
Happiness has where (to) return, belong.
'happiness will thereby accrue to you'.
(Cf. the example with *so*[3] and *kuei*[1] quoted earlier in this article.)

$$Yu^1 \qquad ch'u^3\text{-}chih^1 \quad min^2 \qquad \text{'to whatever people he went'.}$$
Where(ever)   approached   people

$$Wang^2 \quad yu^3 \quad yu^2 \quad sh\hat{e}^4 \qquad \text{'you will find no forgiveness'.}$$
not   there-is   where   pardon.

$$Ch\ddot{u}n^1 \quad tz\breve{u}^3 \quad yu^1 \quad hsing^2 \qquad \text{'that which the superior man does'.}$$
noble   son   where   do
= Swiss German '(das) wo dr edel Ma tüet'.

$$Yu^3 \qquad\qquad yu^1 \quad pu^1 \quad wei^2 \qquad ch'\hat{e}n^2$$
there-are (those) where not become subject(s)

'there are some who would not become subjects'.

In the face of all these examples it seems to me clear that Giles entirely disregarded the question of semantic chronology when he arranged the meanings of *yu*[1] in the following order: 'A place; the place where or which. That which, whereby. Some.' None of his examples really demands the translation 'place', and most of them make no sense with it; whereas, when translated literally by 'where', they all become immediately intelligible in the light of the relative use of that word in other languages.

SERBO-CROATIAN ACCENTS AND QUANTITIES

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1. The purpose of this paper is to describe the accent and quantity systems of the Serbo-Croatian literary language as they function on the synchronic phonological plane, without considerations of morphology or of linguistic history, these being other and separate problems.

The description is based on data presented in the standard works, and on my own observations during a month in Yugoslavia in the summer of 1938.[1]

2. The following stress phenomena are observable in Serbo-Croatian. Words may begin with a loud stress on the first syllable, the succeeding syllables having much weaker stress (i.e., in ordinary terminology, being 'unstressed'). Such words may be of two or of three syllables; monosyllables which are not subordinated within the sentence to other words also have a loud stress. This stress, the falling, decreases in loudness rapidly while the vowel of the syllable is being pronounced, and there is no loudness left when the end of the syllable is reached. Examples are: *bôj* 'battle', *kùća* 'house', *kùpiti* 'to gather'.

Another set of words, all of more than one syllable, may have a different kind of loud stress on the first syllable if disyllabic, on the first or second if trisyllabic, and on the first, second, or third if tetrasyllabic, but never on the last syllable nor on a syllable further from the end than the fourth. This stress, the rising, begins fairly loud and usually increases in loudness slightly through the syllable, so that at the end the loudness is as great as or greater than at the beginning; the loudness does not fall off until well into the syllable succeeding the loud-stressed one; subsequent syllables are quite weak, as are those preceding the stressed syllable. Examples are: *zláto* 'gold', *dòbiti* 'to obtain', *ùčenica*

Cf. A. Leskien, Grammatik der serbokroatischen Sprache (1914); N. Trubetzkoy, Grundzüge der Phonologie 190 (1939).

'schoolgirl'. The difference between the falling stress and the rising stress is very clear in two-syllable words: those with falling stress have a very weak—often voiceless—vowel in the second syllable, while the others have a full vowel in the second syllable; cf. *vòda, vȍdu*, nom. and acc. of 'water'.

In words with rising stress, the second syllable before or after the loud (but not a final syllable) has noticeably greater loudness than the other weak syllables. This secondary stress is especially noticeable when the syllable affected has a long vowel. Examples are: *živopisan* 'artistic', *milióna* 'of the million', where *-pi-, mi-* have secondary stress.

In long and rather artifical compounds, the second element has the main loud stress, but the originally loud syllable of the subsidiary element has a secondary stress which is not determinable from the number of syllables between it and the succeeding loud stress. This secondary stress is of one kind only, falling.

3. Accompanying the stresses just described are automatic pitch differences. With falling stress the pitch falls, and weak syllables are lower in pitch than loud syllables; this includes the syllables with automatic secondary stress. With rising stress, the pitch rises even when the stress does not actually rise but remains level; the following syllable begins at the same level of pitch as the end of the loud-stressed syllable, and the pitch then falls to the pitch level of weak syllables. The non-automatic secondary stress of compounds is accompanied by higher pitch than on weak syllables.

These pitch phenomena vary greatly with individuals and with the sentence intonation, and are in every case conditioned, never independent.

4. The vowels of a Serbo-Croatian word may be relatively long or relatively short. Long vowels are on the whole twice as long as short vowels, impressionistically speaking. Qualitative differences between long and short vowels are slight.

The vowels of syllables with falling stress may be long or short, and the same is true for syllables with rising stress. Weak-stressed syllables following a loud stress may be long (but not quite as long as when loud-stressed) or short, but those before a loud stress (necessarily a rising stress) may only be short. Examples are: *grȁd* 'hail', *grâd* 'city'; *sùza* 'tear', *rúka* 'hand'; *pîsc̄mā* 'of the letters'.

5. We are now ready to give the phonemic summing up of these phonetic data.

Phonemically Serbo-Croatian has two accentual systems, one of stress and one of quantity. The stress system is primary, as it limits quantities in some respects.

Within the stress system there are two main kinds of stress and one subsidiary. The main contrast of stress is between falling and rising, not that between loud and weak, as all weak syllables are of one kind, and the absence of a rising loud stress means that the first syllable in a series of not more than three syllables is loud falling. That is, falling stress may occur on any syllable of a word. This, when there is no rising stress in the word, is actualized as a loud stress on the first of not more than three syllables; in all other cases (i.e., non-first syllables of words without rising stress, and all syllables other than the rising-stressed one), it is a weak stress (with louder, automatic variant in some positions). Rising stress may occur on the penult, antepenult, or preantepenult of a word, and is actualized as a loud level or rising stress. Every word of more than three syllables must have a rising stress, but no word may have more than one rising stress, nor may a monosyllable have rising stress.

The subsidiary kind of stress may be called secondary, is of one kind only (like falling), and occurs only in the non-primary first elements of long compounds.

The quantities are two, long and short. Any vowel may have either, except that long quantity may not occur before a rising stress. There is no restriction on the number of longs or shorts in a word.

Long vowels cannot be analyzed as double vowels in the literary language, though there is this possibility in some of the dialects. Nor do we say that Serbo-Croatian has a number of short vowels and a corresponding number of long vowel phonemes. The proper statement is that there are a number of vowel phonemes, each of which may be accompanied by either short quantity or long quantity, these being prosodic phonemes.

6. The reinterpretation proposed here applies as follows to the usual descriptions of Serbo-Croatian accents in the system of Vuk Karadžić: Vuk's short falling (ȁ) is falling stress with short quantity occurring in a first syllable without a following rising stress; Vuk's long falling (ȃ) is falling stress with long quantity, under the same conditions. Vuk's unaccented syllables are falling stress with either quantity, on a non-first syllable if there is no rising stress, or on a syllable other than the rising stress (only short before the rising stress). Vuk's short rising (à)

is rising stress with short quantity; Vuk's long rising (á) is rising stress with long quantity. Vuk does not include our secondary stress.

A system of marking the stresses and quantities to show the true phonemic relations can be suggested. Falling stress is left unmarked. Rising stress is marked with an acute accent. If there is no rising stress in a word the first syllable is understood to be pronounced loud (Vuk's falling accents). Short quantity is unmarked. Long quantity may be marked with a raised dot following the vowel. Examples: Vuk's *kùća, grâd, vòda, zláto, pîsāmā* are to be written phonemically: *kuća, gra·d, vóda, zlá·to, pi·sa·ma·*.

A NOTE ON VOWEL LENGTH IN AMERICAN SPEECH

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In Language 15.105 Professor Rositzke draws attention to the question of the effect of the initial consonant upon the duration of the vowel which follows it. There is a tendency in some quarters to find that initial voiced consonants are followed by longer vowels than are initial voiceless consonants, and to seek to explain this as a 'natural physiological compensation between stop-energy and vowel duration', with the implication that the voiced consonant is weaker and hence followed by a longer vowel, by way of 'compensation'.

It would seem logically imperative that in any attempt to isolate the effect of voicing versus lack of voicing of an initial consonant upon the length of a subsequent vowel, comparisons should be made between linguistic forms as nearly as possible identical except for the difference in question. To that end, I have drawn from my laboratory records 35 pairs of words, in each of which a phonological opposition rests wholly upon the difference between voiced and voiceless initial consonants. These words were recorded in 1936–1937 and measured as part of my investigation of vowel length in lexical pronunciation. They were not recorded specifically for the use I here make of them and they were distributed among a total number of 281 words in experimental orders arranged to prevent any effect of contrast between adjacent forms. The words, in my own pronunciation, were all recorded at the same tempo, controlled by a metronome, and with the same energy, controlled by the psychological 'set' of the experiment, which called for a clear lexical pronunciation at normal pitch. The time values given represent the duration of the vowel only, and in this respect differ from the values given by E. A. Meyer in his basic study.[1] The measurements are accurate, I believe, to .01 second at least. I recognize the difficulty, in dealing with kymograph records, of discerning the actual point of the beginning of vowel voice after a voiced initial consonant. I have at all times used both a

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[1] Englische Lautdauer; Skrifter utgifna af K. Humanistika Vetenskaps-Samfundet i Uppsala 8, no. 3, 1903.

TABLE I

Differences in duration of vowels after voiced versus voiceless
initial stops

beak	[21]	.202	peak	[20]	.197	.005
beat	[12]	.207	peat	[13]	.197	.010
big	[16]	.209	pig	[19]	.217	− .008
bit	[32]	.143	pit	[22]	.134	.009
beg	[19]	.228	peg	[20]	.242	− .014
bet	[15]	.161	pet	[17]	.156	.005
bade	[17]	.300	paid	[35]	.293	.007
bait	[10]	.228	pate	[6]	.234	− .006
bad	[10]	.289	pad	[32]	.284	.005
bat	[12]	.200	pat	[32]	.205	− .005
bard	[25]	.331	pard	[5]	.323	.008
bug	[17]	.217	pug	[19]	.226	− .009
buck	[19]	.154	puck	[24]	.161	− .007
bike	[23]	.237	pike	[20]	.241	− .004
Dick	[20]	.139	tick	[12]	.134	.005
dip	[20]	.151	tip	[22]	.143	.008
dab	[27]	.268	tab	[32]	.260	.008
dart	[15]	.287	tart	[16]	.280	.007
dirk	[21]	.215	Turk	[16]	.208	.007
dug	[20]	.230	tug	[20]	.223	.007
dub	[24]	.195	tub	[34]	.195	.000
duck	[20]	.164	tuck	[19]	.168	− .004
died	[17]	.299	tide	[12]	.316	− .017
dike	[15]	.256	tyke	[23]	.262	− .006
gape	[29]	.229	cape	[33]	.217	.012
gate	[8]	.214	Kate	[12]	.225	− .011
gab	[15]	.268	cab	[17]	.244	.024
gap	[29]	.222	cap	[31]	.205	.017
gob	[19]	.257	cob	[19]	.263	− .006
got	[12]	.215	cot	[10]	.183	.032
guard	[18]	.360	card	[21]	.354	.006
gut	[16]	.162	cut	[29]	.158	.004
goad	[15]	.288	code	[8]	.291	− .003
goat	[13]	.248	coat	[19]	.241	.007
good	[26]	.200	could	[21]	.211	− .011

throat-note and a mouth-line recorder, but in spite of great care I have doubtless sometimes erred in my determination of this point. In such cases the maximum error is not over 1 mm. and it is probable that such errors, since they were made without preconceived notions of any sort, have nullified one another in the quantitative method used. In computing the duration of each vowel the length of its trace in mm. was multiplied by the reciprocal of the linear speed of the paper (mm. p. s.) and the fraction carried to three points. This is done because it shows the real differences in duration somewhat more accurately when the speed of the paper varies from recording to recording. A time marker was used on every record and no dependence was placed upon the reliability of the kymograph speed.

In Table I I give, in brackets, the number of cases of each word measured, the average duration of the vowel, and in the last column the excess in the length of the vowel after a voiced initial consonant. A minus sign before this last figure means that the vowel after the voiceless stop is longer.

If we assume that these measurements are accurate to .01 second, and disregard differences less than this, we observe first, that of these 35 pairs of words only 9 show a difference as great as or greater than the margin of error of the measurements. In five of these pairs the vowel is longer after voiced than after voiceless initial, in four the reverse is true. These pairs are shown in Table II.

TABLE II

Longer after voiced initial		Shorter after voiced initial	
.032	got : cot	−.017	died : tide
.024	gab : cab	−.014	beg : peg
.017	gap : cap	−.011	good : could
.012	gape : cape	−.011	gate : Kate
.010	beat : peat		

I assume that the pronunciation of each of these words is physiologically a series of movements resulting from a patterned innervation, which is itself a configuration, comprising and fusing the structures of the pertinent phonemes. This innervation follows, in time, the sequence of the pattern; in such a word as *good*, for instance, the innervation for *d* is subsequent to that for the vowel and that for *g*. But the whole flow of innervation is not the addition of three distinct reflexes, but rather a fusion of three into a unitary response to a unitary stimu-

lus. We can, as yet, deal with these patterned innervations only through their manifestations, as we are able graphically to record them. This we may do either with the oscillograph or by the graphic method. Every articulation is a physiological, i.e. a biological phenomenon. As such it may differ considerably from preceding or subsequent efforts by the same individual to repeat the same articulation. We ought, then, to deal with articulations as with biological phenomena, i.e. statistically, and in sufficient quantities to satisfy the requirements of the statistical method. This fact precludes, for most of us, the use of the electronic method for extended investigations, because it is much too expensive. This is not the place, and perhaps I am not the one, to defend the study of the modifications of the breath stream as these can be recorded in the graphic method. I shall say simply, that if one does not attempt to do the impossible, this method will yield adequate measurements which can be brought into sensible relation with the movements of phonation, and hence indirectly with the patterned innervations from which they procede.

Essentially the present problem is this: does or does not the fusion of voiced initial consonant with vowel plus occlusive result in greater length for this vowel than it has if the initial element is without voice? If it does, why is this so? It is well known, that when the final element is a voiced stop the preceding vowel is longer than it is when it precedes a final voiceless stop. We need to recognize, however, that these are problems of total configuration.

Our data present this problem in what is perhaps its simplest form. We have to deal in each case with a single syllable, and thus, in Stetson's sense,[2] with a ballistic movement, in which the initial consonant releases and the final consonant arrests the movement. Stetson says: 'The vowel apparatus makes movements which merely accompany the syllable movement.' The implication, for our problem, is that the length of the vowel may be contingent upon differences involved in completing the movement of each syllable. These differences inhere, it would seem, in the relative effect of the releasing and arresting consonants upon the 'beat' and the 'back' stroke of the syllable movement. Stetson appears to oversimplify the matter slightly, since it is evident that the vowel movements normally have semantic values (*pit* : *pet* : *pat* : *pot* : *put*), and also durational values of their own (Eigendauer).[3]   Neverthe-

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[2] Motor Phonetics 29; Archives néerlandaises de Phonétique expérimentale 3, La Haye 1928.

[3] From my own data: *pit* .134, *pet* .156, *pat* .205, *pot* .171, *put* .149.

less we may well apply Stetson's reasoning to our problem. In the first place, if we intend to study the effect of the releasing consonant upon the length of the vowel, we must, obviously, keep the rest of the movement, i.e. the vowel itself and the arresting consonant, the same in the forms compared, and we must not assume that what we find in one configuration will appear in another. In the second place, if we intend to compare the effect of a voiced releasing consonant with that of a voiceless one upon the length of the vowel, we must keep the rest of this releasing movement the same in the forms compared, i.e. we must compare only homorganic consonants of the same articulatory type. Hence in my tabulations I have used only homorganic stops.

Under the restricted conditions of our comparisons, therefore, the length of the vowel may be due (1) to the promptness with which it begins after the release of the syllable thrust by the explosion of the initial consonant, (2) to the total duration of the syllable movement from release to arrest, or (3) to a combination of these two factors.

Our first inquiry, then, is as to the physiological conditions from the instant of explosion of the initial consonant to the beginning of vowel voice. In the case of initial labials there is no necessary movement of the tongue which must await the release of the initial occlusion; the vowel CAN begin as soon as the air can move past the glottis. In the case of dental or palato-velar stops, the tongue must move from the position of occlusion far enough for the air to begin to flow past the glottis. This, however, is a very slight movement, it is ballistic, and may be accomplished almost instantaneously. The other organic apparatus involved is the larynx. In order to produce vibration of the vocal bands, the breath stream must attain a certain minimum excess of subglottal pressure, and the vocal bands must therefore attain a certain minimum of approximation. To the question of the speed with which the vocal bands can be brought into juxtaposition from the two different starting points involved—low-pitch voicing for voiced stops, and open position for voiceless stops—I have no answer from experimental evidence. In view of the other movements of the larynx involved, I do not regard this potential difference in speed as important for our problem. At the very least, the movement of the bands can be made while other accessory movements of the larynx are being accomplished.[4] The maximum horizontal movement of either vocal process is approximately 4 mm.

We must remember one fundamental fact with respect to the be-

[4] Cf. Rousselot, Principes 721.

haviour of the larynx during stop consonants. The stoppage of the oral and nasal outlets of the breath stream will quickly make the vibration of the vocal bands impossible—just as quickly, that is, as the pressure in the pharynx and mouth becomes equal to that in the trachea. Voiced stops can be voiced only so long as there is a difference in air pressure between the two cavities above and below the bands. Hudgins and Stetson[5] have demonstrated that in the sonant occlusives the larynx is lowered THROUGHOUT the occlusion, thus tending to keep the pressure above the glottis lower than that beneath it. Hence when the occlusion is released, the entire larynx must move from this lowered position to that normally required for the subsequent vowel. It appears that the elevation of the larynx to its rest position, if left solely to the elasticity of the supra-hyoid muscles, is accomplished in .02 second or less. If the supra-hyoid muscles are contracted, as they would be for a vowel articulation, the elevation would be accomplished much more quickly. In any event, any differential between the effect of voiced and that of voiceless stops which might arise from this movement of the larynx downward and the subsequent necessity for elevating it, would favor the more prompt beginning and hence the greater length of the vowel after a voiceless stop. It seems impossible to conclude that the releasing movements of a voiced stop favor the earlier beginning of the vowel.

On the other hand, of course, there is in English after a voiceless stop what is usually called an 'aspiration', 'a very noticeable off-glide', 'a puff of breath'.[6] It is clear from all experimental evidence that the beginning of the vowel after a voiceless stop is deferred somewhat by this 'off-glide'. Meyer (*op. cit.* 52-7) discusses these glides, but does not have sufficient material to warrant a conclusive statement. From my own records I draw two sets of measurements, the first made two years ago, the second made recently of the words represented in Table I above, from recordings of 1936-37. Since the first set of measurements was a mere sampling, more reliance may be placed in the second, which comprises a reasonable number of cases and is statistically satisfactory. It may be said, then, that this interval is approximately the same after each of the three initial stops considered, and that it amounts to about .04 second. If this factor were the determining one, the vowels after voiced stops should be regularly longer than those after voiceless

[5] Arch. néer. de Phon. exp. 11.1-28 (1935).
[6] Kenyon, American Pronunciation[6]; Ann Arbor, 1935.

stops by an interval equal to the difference between .04 second and the average duration of the analogous 'off-glide' after voiced stops. The latter are more difficult to measure accurately, because they are relatively small and because the recording apparatus is perhaps too gross to allow such minute distinctions to be made with complete confidence.   With this reservation I offer the results of the measurements of the words of Table I.   The interval after initial [b] till the beginning of vowel voice (248 measurements) is .017 seconds, after [d] (199 measurements) .016, after [g] (202 measurements) .018.   In general, therefore, we may say .02 second.   Hence, if the promptness with which the vowel begins after an initial stop were the cause of the differences observed between forms with voiced versus forms with voiceless initial stop, we should find this difference to be about .02 second in favor of the vowel after a voiced release.   It is clear from all the evidence that we do not find this condition.

TABLE III

Interval between explosion of initial stop and beginning of vowel voice

	p		t		k	
1937	[60]	.036	[46]	.044	[62]	.049
1939	[284]	.038	[205]	.041	[224]	.042

If it were a difference in the duration of the syllable movement as a whole which accounted for the alleged greater length of the vowel after an initial voiced stop, we should expect to find the average values for these syllable movements shorter for the syllable movement after a voiceless release than after a voiced initial stop.   If the total movement were longer after the voiceless release, any excess of length of the vowel after the voiced stop would, under this hypothesis, always be less than .02 second, the difference between the intervals between release and vowel inception discussed above.   A shorter total syllable movement after a voiceless release appears to be, although it has not, so far as I know, been so stated, the assumption of those who would explain such differences as 'compensation' between reduced energy expenditure in the initial consonant and the vowel duration.   The assumption appears to be that when less energy is expended in the execution of the initial consonant, the syllable movement, and with it the vowel, is prolonged, in order to use up a theoretical residuum from the total energy allotted to the syllable.

Here again, it is useful to apply Stetson's principle, that the syllable

is a ballistic movement.   From that premise one might infer that, if
the releasing movement is organically independent of the arresting
movement, the more energetically the release is accomplished, the more
quickly the movement will reach its point of arrest.   The more powder
behind a given missile, the more quickly it will reach a given target.
But this comparison is inaccurate; the vowel movement is not a missile
and the target, the arresting consonant, is not a fixed point.   Perhaps
also the comparison of the tennis stroke[7] is not quite apt, since the
arrest of the syllable is not quite the same process as the arrest of the
moving arm, in that the set of muscles which arrests the movement is
not structurally opposed to that which releases it, and there is no
element of direction of movement involved in their contraction.   Under
the conditions of our study, however, in which the arresting process is
the same in each of the two members of a given comparison, it would
seem that the duration of the vowel might be contingent upon the
relative promptness with which the arresting movement takes effect.
It is clear that the arrest of the chest pulse is pneumatic, at any rate in
our examples, and hence it seems that the greater the energy of the
breath stream impinging upon an arresting occlusion, the more pressure
must be built up to stop it.   This may well imply a longer time between
occlusion and complete arrest.   This variable is further complicated by
the variable resulting from the difference in subglottal pressures for the
various vowels.[8]   I cannot deal with it statistically.   We may eliminate
it from our consideration by the procedure of measuring to the begin-
ning of the arrest rather than to its completion.   Since there can be no
vowel superimposed upon the arresting occlusion, this procedure appears
to be unobjectionable, particularly since in our comparisons the vowels
and the arresting occlusions are identical in each member of the pair
of words measured.   In Table IV I give, therefore, the words of Table I,
showing this time the length of the total movement from the instant of
release to the instant when the arresting occlusion is effected, or more
exactly perhaps, to the instant when the effect of the arresting occlusion
is first shown in the vibrations of the mouth and larynx lines.   Re-
peated checkings show that in my records this point is precisely simulta-
neous in the two traces.   In the last column I give the excess of duration
of this movement in the syllable after a voiced initial stop; a minus
sign before the figure here means that the movement is longer after the
voiceless initial stop.

[7] Stetson, Motor Phonetics 27.
[8] Cf. Gutzmann, Physiologie der Stimme und Sprache 28-39 (1928).

TABLE IV

Differences in duration of the total movement from initial release to the beginning of the arresting occlusion

beak	[21]	.216	peak	[20]	.227	−.011
beat	[12]	.224	peat	[13]	.239	−.015
big	[16]	.223	pig	[19]	.253	−.030
bit	[32]	.158	pit	[22]	.165	−.007
beg	[19]	.244	peg	[20]	.277	−.033
bet	[15]	.185	pet	[17]	.191	−.006
bade	[17]	.322	paid	[35]	.339	−.017
bait	[10]	.244	pate	[6]	.274	−.030
bad	[10]	.303	pad	[32]	.332	−.029
bat	[12]	.219	pat	[32]	.247	−.028
bard	[25]	.357	pard	[5]	.376	−.019
bug	[17]	.230	pug	[19]	.260	−.030
buck	[19]	.166	puck	[24]	.195	−.029
bike	[23]	.252	pike	[20]	.277	−.025
Dick	[20]	.151	tick	[12]	.171	−.020
dip	[20]	.172	tip	[22]	.175	−.003
dab	[27]	.281	tab	[32]	.304	−.023
dart	[15]	.305	tart	[16]	.326	−.021
dirk	[21]	.229	Turk	[16]	.249	−.020
dug	[20]	.245	tug	[20]	.264	−.019
dub	[24]	.210	tub	[34]	.235	−.025
duck	[20]	.179	tuck	[19]	.207	−.028
died	[17]	.320	tide	[12]	.361	−.041
dike	[15]	.269	tyke	[23]	.305	−.036
gape	[29]	.247	cape	[33]	.261	−.014
gate	[8]	.234	Kate	[12]	.269	−.035
gab	[15]	.284	cab	[17]	.289	−.005
gap	[29]	.239	cap	[31]	.247	−.008
gob	[19]	.275	cob	[19]	.301	−.026
got	[12]	.231	cot	[10]	.224	.007
guard	[18]	.384	card	[21]	.404	−.020
gut	[16]	.185	cut	[29]	.196	−.011
goad	[15]	.301	code	[8]	.337	−.036
goat	[13]	.270	coat	[19]	.277	−.007
good	[26]	.216	could	[21]	.247	−.031

It is immediately clear that in none of these pairs of words is the duration of the total movement less after a voiceless stop than after a voiced release. Moreover, in only seven pairs of words (including *got* : *cot*) is there essential equality in the duration of the total movement, i.e., a difference of less than .01 second.   In 25 pairs the duration of the total movement after a voiceless release exceeds that after a voiced release by .015 sec. or more, in 21 pairs the excess is .02 sec. or more.   This appears to be in harmony with what we know about ballistic muscular movements.   Weak movements are more easily stopped than strong ones.   We soon learn, that when we try to stop a strong ballistic movement too quickly, we incur the risk of strain.   It seems probable, therefore, that our tendency to do things with minimum muscular effort leads us to initiate the arrest of a stronger movement somewhat later than we should begin the arrest of a weaker one.   I think that is why the vowel itself begins later after a strong explosive than after a weaker one, because the vowel is definitely a 'brake' or impedance of the breath stream, and as such an accessory to if not a functional part of the arrest.   It is much more tiring to whisper than to speak with voice.

As a probable explanation of the situation disclosed by the data of Table IV I suggest the following general thesis, with the basic premise that the tempo and general level of energy of utterance remain the same, as they do in the experiments from which these data are drawn:

1. The beginning of the vowel takes place when the energy of the breath stream after the explosive release reaches an approximately fixed level.   The breath stream is allowed to escape freely (in an 'off-glide') until this level is reached, and this free escape is longer after a voiceless than after a voiced release by approximately .02 second.   This fixed level of breath stream energy may differ for the several categories of vowels.

2. The vowel articulation functions as an impedance to the breath stream, and through this to the chest pulse.   This impedance varies from vowel to vowel, as is shown by the differences of subglottal pressure found for the various vowels.

3. The occlusive arrest of the syllable movement tends likewise to begin at an approximately fixed level of breath stream energy.   The time of its beginning is therefore contingent upon the effect of the free escape plus the impedance of the vowel articulation.

4. A voiced final occlusive begins at a lower level of breath stream energy, and hence, under otherwise identical conditions, later, than the

homorganic voiceless occlusive. This variable is independent of the level for vowel inception. Vowels before voiced stops are longer than before voiceless stops.

5. The effectiveness of the free escape, as well as that of the vowel impedance, is a function of energy and time. Therefore the correlation will not always appear in terms of duration alone. Moreover, since neither variable is functional from the standpoint of the language, there may be considerable variation from word to word in the degree to which each of the two factors shares in the work of reducing the energy of the breath stream.

There is in the data of Table IV a certain amount of correlation with those of Table I, in the sense that when the vowel after a voiced stop is longer than the vowel after a voiceless stop, the total syllable movement is either about the same, or only slightly longer after the voiceless stop. Likewise, in those cases in which the vowel after the voiceless stop is longer than the vowel after a voiced stop, the excess of duration in the syllable movement is greater than the average excess. When the two vowels are about the same length, the syllable movement is regularly about .02 second longer after the voiceless stop. There are only four cases in which both vowel length and syllable movement are about equal in each member of the pair. These are *bit* : *pit*, *bet* : *pet*, *dip* : *tip*, *goat* : *coat*. In each of these pairs except *bit* : *pit*, the free release after the voiced explosive is longer than the average and the 'off-glide' from the voiceless stop is shorter than the average for these consonants. In *bit* : *pit* the difference is chiefly in the brevity of the free release after [p]—.031. According to our thesis we cannot expect to show a clear correlation in terms of duration alone. I submit that what we have found is a reasonable ground for believing that a compound correlation exists. In Table V, I present a comparison of the data from Table II, together with some characteristic further comparisons from Tables I and IV.

My argument is subject, obviously, to the objection that my data come solely from my own pronunciation, and that since I do not regularly have a longer vowel after a voiced than after a voiceless initial stop, I can hardly expect to find an explanation for this alleged phenomenon in my own measurements. I have found, I believe, a clear indication of consistent compensation between the effect of the free movement and that of the vowel impedance upon the total duration of the syllable movement. If this free movement (the 'off-glide') is a function of the energy of the initial occlusive, then I have given evidence

of a 'natural physiological compensation between stop-energy and vowel duration,' but not in the sense that voiced stops are followed by longer vowels. One may not draw from this situation the inference that voiced stops are sometimes stronger than voiceless stops; they are always weaker, at least in terms of this free movement. However, the difference in energy between correlative voiced and voiceless stops varies from one pair of words to another, and is sometimes quite small, if one may judge from a durational difference of .011 sec. as compared with a normal .02 sec. or more. These differences in stop-energy are compensated either by increased duration of the free movement after release, or of the vowel, or by changes in both factors. The normal

TABLE V

Differences in Vowel Length (V) compared with differences in the length of syllable movement (S)

Longer			Shorter		
V	S		V	S	
.032	.007	got : cot	−.017	−.041	died : tide
.024	−.005	gab : cab	−.014	−.033	beg : peg
.017	−.008	gap : cap	−.011	−.031	good : could
.012	−.014	gape : cape	−.011	−.035	gate : Kate
.010	−.015	beat : peat	−.008	−.030	big : pig
.009	−.007	bit : pit	−.006	−.036	dike : tyke
.008	−.003	dip : tip	−.006	−.030	bait : pate
.007	−.021	dart : tart	−.003	−.036	goad : code
.007	−.007	goat : coat			
.005	−.011	beak : peak			

compensation is accomplished chiefly by the free movement; occasionally, however, the vowel takes up the main part of the compensatory task. This occurs, in my opinion, independently of any mechanical factors and as a reflex of a difference in total configuration, peculiar to a particular word for a given individual. It may appear in either word of the correlated pair.

In support of this statement, I am able to present the following data, compiled under my supervision by Mr. W. N. Locke, who in 1937–38 repeated my first investigation of vowel duration before dental stops.[9] This material is tabulated in the same way as that of Table I above, and in the last column I give the difference in vowel length found

[9] American Speech 12.128–34 (1937).

in my own data, for comparison with Locke's figure which immediately precedes it.

Of these seventeen pairs of words Locke has 11, I have 5, in which the difference equals or exceeds .01 second. Locke shortens where I lengthen, in *beat : peat*. We are essentially alike in 5 pairs: *bit : pit, bad : pad, bard : pard, goat : coat, gut : cut*. Locke lengthens where I make no distinction, in 7 pairs: *bat : pat, bait : pate, bade : paid, bet : pet,*

TABLE VI

Differences in the length of vowels after voiced as compared with voice-less initial stops, found in the measurements of W. N. Locke

beat	[11]	.155	peat	[17]	.171	−.016	.010
bit	[11]	.116	pit	[9]	.115	.001	.009
bet	[12]	.152	pet	[6]	.129	.023	.005
bade	[12]	.301	paid	[12]	.286	.015	.007
bait	[8]	.214	pate	[8]	.187	.027	−.006
bad	[11]	.280	pad	[9]	.272	.008	.005
bat	[8]	.183	pat	[8]	.173	.010	−.005
bard	[9]	.326	pard	[8]	.318	.008	.008
dart	[11]	.253	tart	[12]	.234	.019	.007
died	[8]	.338	tide	[15]	.292	.046	−.017
gate	[8]	.216	Kate	[9]	.194	.022	−.011
guard	[11]	.326	card	[11]	.295	.031	.006
got	[9]	.168	cot	[8]	.166	.002	.032
gut	[8]	.126	cut	[12]	.126	.000	.004
goad	[9]	.322	code	[9]	.299	.032	−.003
goat	[12]	.200	coat	[11]	.192	.008	.007
good	[20]	.186	could	[21]	.175	.011	−.011

dart : tart, goad : code, guard : card. He makes no distinction where I lengthen, in *got : cot*. He lengthens where I shorten, in 3 pairs: *died : tide, gate : Kate, good : could*.

I should explain that I do not have the original tracings from which Locke's data were drawn, and cannot subject them to re-measurement, as I have subjected my own. Neither set of data was collected for the purpose for which it is here used. I should infer from the nature of Locke's data that the 'off-glide' after voiced stops is consistently in-

cluded in the vowel length. This would have little or no effect upon the conclusions we wished then to draw from the measurements. Moreover, we applied the statistical method to the total measurements for each vowel before [d] and before [t], and not to the measurements for each word. That was a methodological error, but one which we may condone, since we were operating upon the best premises then available, viz. Meyer's Englische Lautdauer. Subsequent study of my own data shows that of the 70 words here involved 23 are represented by data which are statistically satisfactory. The data for the remaining 47 words fail in one way or another to yield a satisfactory curve. This does not mean that the averages given are incorrect; it means that they may be so. They represent, in any case, the averages of a considerably larger number of cases than are represented in previous publications of this kind. It is, moreover, impossible now to add to the data of my Table I. These are measurements of physiological movements executed in 1936-37, and there is no reason to assume that the same individual would execute these movements in the same time relationships in 1939.

Despite these restrictions as to the reliability of the data offered, I cite Locke's measurements with mine in support of the thesis that the precise manner in which the stop-energy - vowel duration compensation is achieved is, in many words, individually determined. These differences, since they are non-functional, and for the most part below the limit of perception, are purely individual and implicit in the total nervous configuration of each word as a unit. From my occupation with something over seventy-five hundred measurements of about three hundred words I have come to believe that, within the general limits of variation for the several speech sounds involved, each word has its own durational characteristics which result from more or less subtle and linguistically unimportant factors involved in the conditioning of the reflex—or learning of the word—in a given individual.

I have tried to outline the procedure necessary in any serious study of this problem, and I have advanced a thesis, by which such variations as I find may be explained. Some 850 new recordings of 34 words of Table I have convinced me that further measurements would not reveal a consistent lengthening of the vowel after a voiced stop in my speech. Before I could believe that such a phenomenon exists in American speech, I should have to see unimpeachable evidence of it, and such evidence must be statistically more satisfactory than the data I have offered here, and methodologically more satisfactory than the evidence offered by Rositzke or by Einarsson. Indeed, if there is a consistent

factor of comparison operative upon the duration of vowels after an introductory pronoun, as is observed by Marguerite Durand (Travaux du Cercle Ling. de Prague, 8.47, 1939), the results of Rositzke and also those of E. A. Meyer are subject to adventitious variations due to their use of some particle prefixed to each word. Pallier[10] must be given credit for having seen the necessity of comparing only pairs of words in which the difference is solely that factor whose effect is sought. He does not see the necessity for a larger number of measurements of each form, and his averages rest upon four measurements of each word. Both Pallier and Einarsson operate with nonsense syllables, a procedure which should be used with reservation until it is established that such nonsense syllables are physiologically and psychologically comparable with established word configurations proper to the language. This is, in its own right, an interesting problem. I may say here only, that it appears that such nonsense syllables, if they involve no combinations foreign to the habits of the language, are so readily 'learned' by the subject that the durational values for them do not materially differ from those found for established words. If one omits from Pallier's data the comparisons involving nonsense syllables, his results when tabulated after the manner of our Table I show:

TABLE VII

[bit]	.117	[pit]	.134	− .017
[gɛt]	.154	[kɛt]	.145	.009
[bɛt]	.148	[pɛt]	.137	.011
[gut]	.133	[kut]	.143	.010

Finally, it must be observed that Pallier is entirely aware of the inadequacy of the results he offers. He says (p. 92), 'Ich will vorausschicken, dass in diesem Punkt das Material keine allzugrosse Zuverlässigkeit besitzt.' And he points out that he draws his conclusions from the combination of data which he knows ought not to be combined. It is therefore somewhat premature to regard his results as definitely establishing 'highly regular correlations in a Middle German dialect.'

[10] Gregor Pallier, Untersuchungen zur Quantität der Vokale und Konsonanten, Diss. Marburg, 1934.

ANALOGICAL WEAK PRETERITE FORMS IN OLD ICELANDIC

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The purpose of this paper is to show the probable point (or points) of contact between the strong and the weak verbal systems, which resulted in the development of a new analogical weak preterite form with dental suffix (which either existed alongside the original strong form or entirely displaced it). Cases of borrowing from an already existent weak verb (such as *søkta* 'sank' for *sǫkk*, *hangða* 'hung' for *hekk*) will therefore be omitted. It is, however, often doubtful whether the weak preterite was thus borrowed or was due to association between the strong and the weak verbal systems.

The principal points of contact between the strong and the weak verb seem to be (1) the *j*-suffix (with *jan*-verbs) and the *n*-suffix (with *nōn*-verbs), (2) the low grade radical vowels *i* of the 1st ablaut series and *a* of the 6th ablaut series (both with *ōn*-verbs), (3) contraction which threw the strong verbal form out of its regular scheme into the pattern of the weak verb, (4) association with the corresponding substantive (with denominative *ōn*-verbs), and (5) other points of contact which we may classify here as miscellaneous.

I. The suffixes -*j* and -*n*:

A. The suffix -*j* (with *jan*-verbs): *skepja* 'shape', *skōp* : *skapta* (= OHG *scafta*[1]) after the pattern of *glepja* 'confuse', *glapta*, etc.— *sverja* 'swear', *svōr* : *svarða* after the pattern of *ferjan* 'ferry (over)', *farða*, etc.—*tyggja* 'chew', *tǫgg* : *tugða* after the pattern of *hyggja* 'think', *hugða*.—*deyja* 'die', *dō* : *deyðe* (3d sg.) after the pattern of *heyja* 'conduct', *hāða*; *þreyja* 'desire', *þrāða*, but with retention of the radical

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[1] The OHG form *skafta* is probably, like ON *skapta*, of secondary origin after the pattern of the *jan*-verbs with *e* in the present system (*skepfan*, *skafta* like *sezzen*, *sazta*); cf. *stepfen*, *stafta* (OS OE *stōp*). See Braune, Ahd. Gram.[3-4] §347 Anm. 3, 6.

However, there is a possibility that there originally existed a weak verb **skapjan*, **skapida* and that ON *skapta* : OHG *skafta* represent forms borrowed from this verb (cf. Collitz, Das schwache Prät. 43).

vowel of the present singular (*dey* : *deyr*); cf. the contracted verb with final vowel of the stem (III).

B. The suffix *-n* (with *nōn*-verbs): *fregna* 'hear of', *frā* : *fregnaða*; *sporna* 'spurn', *sparn* : *spornaða* after the pattern of *vakna* 'awake', *vaknaða*, etc.   The form *fregnaða* could also represent a denominative *ōn*-verb (substantive *fregn* 'information').

II. The low grade ablaut vowels (with *ōn*-verbs[2]):

A. The radical vowel *i* of the 1st ablaut series: *svim(m)a* 'swim', *svam* : *svimaða* (3d series) after the pattern of *blika* 'gleam', *blikaða*, etc., which developed alongside the corresponding strong verbs of the 1st series (*blīkja*, etc.).

B. The radical vowel *a* of the 6th ablaut series: *aka* 'drive', *ōk* : *akaða*; *gnaga* 'gnaw', *gnōg* : *gnagaða* after the pattern of the *ōn*-verbs which developed alongside the strong verbs of the 6th series; cf. *skaða* 'harm', *skaðaða* (Goth. *skaþjan*, *skōþ*); *baka* 'bake', *bakaða* (OHG *bachan*, *buoh*); *skapa* 'shape', *skapaða* (*skepja*, *skōp* above); *kafa* 'dive', *kafaða* (*kefja*, *kōf*).

III. The contracted verb:[3]

A. Influence of the contracted weak verbs: *ljā* (*lēr*) 'lend', *lēða*[4] (Goth. *leihvan*, *laih*); *tjā* (*tēr*) 'show', *tēða* (Goth. *teihan*, *taih*); *tjōa* (*tȳr*) 'avail', *tȳða* (Goth. *tiuhan*, *tauh*) after the pattern of the contracted weak verbs *fjā* 'hate', *fjāða*; *þjā* 'enslave', *þjāða*, etc., but with retention of the radical vowel of the present singular system.

B. Influence of the *jan*-verbs: *flȳja* (*flȳr*) 'flee', *flō* : *flȳða*; *spȳja* (*spȳr*) 'vomit', *spjō* : *spūða*.   The new infinitive forms *flȳja*, *spȳja* with *j*-suffix and radical vowel *ȳ* of the present singular system threw the original strong verbs into the pattern of the weak *jan*-verb. With *flȳja*, *flȳða* compare *frȳja* 'taunt', *frȳða*; with *spȳja*, *spūða* compare *lȳja* 'beat', *lūða*.

[2] Cf. Wilhelm Wissmann, Nomina Postverbalia in den altgerm. Sprachen (Ergänzungsheft zur ZfVglSprachf., No. 11, 1932), Chap. 2, Schwundstufige deverbative *ō*-Verba, 46 ff.

[3] Cf. Noreen, Aisl. Gram.[4] §488 Anm. 2, 3, 4.

[4] That *sjā* (*sēr*), *sā* (Goth. *saihan*, *sah*) escaped the influence of the weak verb may be due to the fact that the contracted forms *sē* : *sēr*, *sā* preserved the original ablaut variation *ě* : *ǎ* (cf. *met* : *metr*, *mat*; *gef* : *gefr*, *gaf*) in lengthened form, whereby the feeling for the strong verb was kept intact.

In the 1st ablaut series, on the other hand, the contracted forms *tē* : *tēr*, **tē* < **teih* resulted in vowel conformity (*ē*) in the present and past tense, thereby obliterating the ablaut relation and facilitating the formation of a new weak preterite form by the addition of the dental suffix; i.e. *tē* : *tēr*, **tē* + *da* > *tēda*.

C. Influence of the *ōn*-verbs: *tjōa* 'avail', *tjōaða* after the pattern of *flōa* 'flood', *flōaða*; *glōa* 'shine', *glōaða*, etc. The point of contact is the final *-ō* of the stem. The form *tjōða*, which also occurs, is due to the influence of the contracted weak verb. Other variant forms of these contracted verbs are here omitted, since their explanation is not essential to this discussion.

IV. Influence of the denominative type (*ōn*-verbs): From the corresponding substantive a new weak *ōn*-verb has developed alongside the original strong verb. This category therefore differs from all the others in that the weak preterite form was not due to any similarity between strong and weak verb but to the encroachment of the denominative *ōn*-verb upon the strong verb through the corresponding substantive. This substantive furnished the bridge between the two verbal systems. All these verbs occur as weak also in the present system.

A. 4th ablaut series: *hjālpa* 'help', *halp* : *hjālpaða* (substantive *hjālp* 'assistance'); hence *bjarga* 'help', *barg* : *bjargaða* (with no corresponding substantive).

B. 5th ablaut series: *trega* 'grieve', —— : *tregaða* (substantive *tregi* 'grief').

C. Reduplicating verbs: *auka* 'increase', *jōk* : *aukaða* (substantive *auki*); *blanda* 'blend', *blett* : *blandaða* (substantive *blanda* 'mixture'); *falda* 'fold', *felt* : *faldaða* (substantive *faldr* 'fold'); *blōta* 'worship', *blēt* : *blōtaða* (substantive *blōt* 'sacrifice'). With *falda*, *faldaða* compare OHG *faltōn*.[5]

V. Miscellaneous group:

A. Verbs of the 1st ablaut series with final *ð* of the stem (with long-stem *jan*-verbs): *kvīða* 'feel apprehension for', *kveið* : *kvīdda*; *līða* 'go', *leið* : *līdda*; *sīða* 'work spells', *seið* : *sīdda*; *snīða* 'cut', *sneið* : *snīdda*; *svīða* 'singe', *sveið* : *svīdda* after the pattern of *beiða* 'ask', *beidda*; *møða* 'exhaust', *mødda*; *eyða* 'empty', *eydda*, etc. The radical vowel *ī* likewise occurs in the *jan*-verbs (cf. *glīma* 'wrestle', *hlīfa* 'shelter', *hvīla* 'rest'), altho I have found no cases of this before final *ð* of the stem. Final *ð* occurs in *troða* 'tread' (4th ablaut series): *troða*, *trað* : *tradda* after the pattern of *gleðja* 'gladden', *gladda*;[6] *bleðja* 'pick off',

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[5] Cf. Wissmann 33, §71. Wissmann here suggests the possibility of a PGmc. **faldōn* = OHG *faltōn*, in which case ON *faldaða* (= OHG *faltōta*) would represent the original weak verb. Against this is, however, the example of the other reduplicating verbs with preterite form in *-aða*, for which no PGmc. *ōn*-verb can be postulated.

[6] Cf. Noreen, §496 Anm. 3.

bladda, etc. The point of contact is the -*eð*- of the present singular system: *treð* : *gleð*.—That not only the final *ð* of the stem but also vowel conformity in the present system of the strong and the weak verbs (*ī* of the 1st ablaut series, *e* in *treð*) was necessary for the development of the new weak preterite form is further supported by the fact that verbs of the 2d ablaut series whose stem ends in *ð* never developed a weak preterite form. These verbs all contain the radical diphthong *iō* (cf. *bjōða* 'offer', *rjōða* 'redden', *sjōða* 'boil', etc.), which never occurs in *jan*-verbs, since these require *i*-umlaut.

B. *Sveipa* 'sweep', *sveip* : *sveipta* possibly after the pattern of *reisa* 'raise', *reista*; *veita* 'convey', *veitta*, etc., with radical diphthong *ei*, but more probably borrowed from the corresponding *jan*-verb **svaipjan* > *sveipa*, *sveipta*. The form *sveipaða* represents a later denominative *ōn*-verb *sveipa* (substantive *sveipr*, *sveipa*, cf. IV).

C. *Svīfa* 'rove', *sveif* : *svīfða* after the pattern of *hlīfa* 'shelter', *hlīfða*. The point of contact is the final -*īf* of the stem.

D. *Fregna* 'hear of', *frā* : *fregnda* after the pattern of *kenna* 'know', *kenda*; *brenna* 'burn', *brenda*. The points of contact are the radical vowel *e* and the final -*n* of the stem. Strong verbs with *n*-suffix were rare and thus readily yielded to the influence of the weak verbs (cf. *fregnaða*, I.B). The present system of both *fregnda* and *fregnaða* may be weak.

E. *Feta* 'step', *fat* : *fetaða*; *freta* 'break wind', *frat* : *fretaða*, due to a denominative *ōn*-formation (substantives *fet* 'pace', *fretr* 'fart') and possibly influenced by the example of the synonymous *ōn*-verbs *fata*, *fataða*; *frata*, *frataða*.

F. *Sōa* 'destroy', —— : *sōaða* (past ptc. *sōinn*) after the pattern of the *ōn*-verbs *flōa* 'flood', *flōaða*; *glōa* 'shine', *glōaða* with final *ō* of the stem (cf. *tjōa*, *tjōaða* III.C).

G. *Bauta* 'beat?', plur. *bautum*, *bautaða*, perhaps due to the example of *auka* 'increase', *aukaða*, with radical diphthong *au*.

In the foregoing analysis no attempt has been made to determine the chronology of the various analogical formations. Most of the weak preterite forms belong to the Late OIc. period when the process was already started on its way to Mod.Ic. The oldest type was probably the contracted verb, which was already fixed in the classical period. The new weak preterite form must have developed soon after the contraction took place in the preliterary era.

Furthermore, no attempt has been made (except incidentally) to coordinate this material with WGmc. conditions. The principle gov-

erning the encroachment of the weak verb upon the strong must, how-
ever, have been the same in all the Gmc. languages.   This process had
already begun in PGmc. (cf. Goth.[7] *bringan* 'bring', **brang* : *brāhta* after
the pattern of the already established *ht*-class *þankjan* 'think', *þāhta*,
etc.) and is evident in Gothic.[8]   With phonetic differentiations the
points of contact between strong and weak verbs became more nu-
merous and varied.   A systematic analysis of the WGmc. dialects in
this respect is much to be desired.

[7] The Gothic conditions are here of PGmc. origin.
[8] Cf. Jellinek, Geschichte der got. Spr. §201.

MISCELLANEA

Tuscan *mucca*, Umbr. and March. *mungana* 'milch-cow'

In LANGUAGE 15.38–9 (1939) I suggested the derivation of Tusc. *mucca* 'milch-cow' from *vacca* contaminated with the root *mung-* 'to milk'. The essential correctness of this hypothesis is further attested by the following considerations, primarily of a geographical order:

Mucca occurs on map 1045 of the AIS at five points fairly close together in central Tuscany (Barberino di Mugello, Vinci, Incisa, Montecatini, and Siena), and at Cortona in Umbria, forming a fairly compact area. Another type, *muŋgána*, is represented at the outlying points of Treia (Marche) and Marsciano (Umbria), and also at Civitella-Benazzano (Umbria) in the form *muŋgẹna* (with regular -ẹ- < -á-, cf. Civ. *mẹne = mani*, map 151). This latter type, with Tuscan development of -ŭ- before -ng- in pretonic syllable, gives unmistakable evidence of derivation from the root *mulg-*.[1] By the same token, Tusc. *mucca* is clearly indicated to be either a contamination of *vacca* with the type *mungána* (probably present at an earlier date in Tuscany, as shown by its preservation in the outlying areas) or else with some form of the verb *mungere*.

It is further worth noting that the kind of cow represented by *mucca*, *mungána* is indicated by the AIS as belonging specifically to a special type, mostly of foreign origin, and obviously imported for the purpose of furnishing milk.

Connection with the type *mŭccus *mŭcceus* is definitely excluded by the fact that, with respect to this latter type, central Tuscany is a solid area of *mọkko* and derived forms (map 169); -ọ- is in evidence in this type also in the two Umbrian towns in question, whereas the -u- in Treia *mućalo* is the normal representation of -ọ- preceding -ĭ, -ŭ in the Marche—in this case in the basic form *muću < *mŭcceus.[2]

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[1] As pointed out also by Alessio, in an article (ZRPh. 59) published since the writing of this note; Alessio, however, cites only the non-Tuscan form *mongana*, from old texts.

[2] Cf. Neumann-Spallart, Zur Charakteristik des Dialektes der Marche, ZRPh. 28.279 (1904) (Treia *sulu, cuntu, cumu*) and map between 384 and 385, showing the northernmost extent of umlaut as being well to the north of Treia.

I am indebted to Mr. J. Stellwagen for information concerning a certain disease of cows in which a mucus-like discharge is indeed given off from the udder. However, *mucca* refers specifically to cows kept for milking purposes, not to diseased cows of any kind.

REVIEWS

HANDBOOK OF AMERICAN INDIAN LANGUAGES, Part 3: Tonkawa, by
Harry Hoijer; Quileute, by Manuel J. Andrade; Yuchi, by Günter
Wagner; Zuni, by Ruth L. Bunzel; Coeur d'Alene, by Gladys A.
Reichard. Edited by FRANZ BOAS. Pp. x + 707. [New York:] J. J.
Augustin Inc., Publisher, 1933-8.

In reading these grammars one must remember that most of the field
work on which they are based was done before 1930. Until the appear-
ance of Bloomfield's Language in 1933 there was no satisfactory guide
to grammatical analysis; even today there is in print nothing really
serviceable for the phonetic aspects. Condemnation and praise alike
must be governed by these facts.

From 1933 to 1938 the five sections of the present volume were
separately released as 'extracts' from the forthcoming book. A number
of reviews of one part or another have appeared, in LANGUAGE and
IJAL, and to these the readers may be referred for detailed analysis.
In the present review comment will be made topically.

PHONETICS. It cannot yet be required of the writer of a grammar
that his phonetics be 'phonemic,' for the meaning of that term is still
too much in dispute. However, one may justifiably expect the fol-
lowing: (1) that the definitions of the symbols used be such that no
transcription is phonetically unclear, and (2) that the description of
segmental sounds, of accentual or rhythmic patterns, and of sentence
types be such that the reader may venture to reorganize the material
according to his own particular brand of 'phonemics.' In the present
volume only Andrade's treatment of Quileute approaches this standard.

It is interesting to note that the chief cause of deficiency in phonetic
description in the other grammars seems to be precisely the phonemic
trend, the fashion of 'patterning' one's analysis. Thus Reichard uses
the symbols $\acute{w}$, $\acute{y}$, $\acute{l}$, etc., on the analogy of $\acute{p}$, $\acute{t}$, $\acute{k}$, etc., but fails to
inform the reader how the former symbols are to be read. A voiced
sound cannot be glottalized in the same sense as a voiceless one; glottali-
zation implies closure of the vocal cords, voicing requires that they be
open. One may guess that the glottalized voiced continuants of Coeur
d'Alene are like those of Nootka, a glottal closure released into the
continuant; but the symbols might mean postglottalized sounds, or

54

continuants interrupted by glottal closure, or even continuants uttered with glottal stricture. Similar lacunae are to be found in the work of Hoijer, Bunzel, and Wagner. Nor, in this case, does the date of the investigations excuse the shortcomings; the Quileute is satisfactory, as are such grammars as the Takelma and Kwakiutl done thirty and forty years ago by Sapir and Boas.

MECHANICS. Today it has become the fashion to collect into one place all the mechanical details of formative processes—the specific internal changes involved in each type of ablaut, the secondary modifications accompanying affixation, and so forth—and to devise a set of symbols by which these changes may be abbreviated, and by which any regularities that underlie apparent irregularities may be emphasized. Hoijer anticipates this trend in presenting, before everything else, the essential mechanical feature of Tonkawa, the alternation between retention and loss of thematic vowels depending on the pattern of affixation. Unfortunately, he does not devise a scheme of abbreviation, such as is suggested by Haas.[1] Andrade could well have used a morphophonemic system similar to that used by Sapir and Swadesh in their Nootka work.[2] In the other three grammars mechanical data are in part mixed in with phonetics, in part scattered through the morphology; but ten years ago this was still the custom.

MORPHOLOGY. Andrade's presentation of Quileute morphology is excellent though difficult to read; Hoijer's of Tonkawa is complete and needs but little reorganization to suit the most fastidious patternist. Zuni and Coeur d'Alene are difficult to grasp because the material is organized on the basis of contrast of ideas, not contrast of forms.

The most readable morphological section is that on Yuchi, in which there is described a gender system so interesting that it bears condensed presentation here. The basic classification of nominal references (nouns, substitutions, and references in possessed nouns or verbs) is the familiar bipartite one into animate and inanimate. The animate class includes one subdivision for all animate entities which are not members of the Yuchi tribe, another for those which are, and the latter is subdivided on the basis of the nature of the relationship between the speaker and the reference. Thus at this point grammatical gender becomes most interestingly involved in the tribal kinship system. Inanimate references fall into four subclasses: single horizontal objects, single ver-

[1] Mary R. Haas, review of Hoijer's Tonkawa in IJAL 9.122-4.
[2] Edward Sapir and Morris Swadesh, Nootka Texts (Linguistic Society of America, Philadelphia, 1939); part 3, The Primary Structural Elements of Nootka.

tical objects, single neutral or 'round' objects, and plural objects of any shape.   A particular nominal stem is either horizontal, or vertical, or round, but any may be made plural.   Of course many classifications are arbitrary.   Thus 'my strength', 'my spirit', and 'their language' are all inanimate, the first horizontal, the second vertical, the third round.   In nouns all the small subclassifications are parallel, being marked by suffixes which have also, perhaps, slight articular force.   Interestingly enough, the three inanimate singular class suffixes are homonymous with the verb stems meaning 'to lie', 'to stand', and 'to sit'.   The syntactical function of this extensive categorizing is to link words in full sentences, and to make references relatively explicit in a sentence containing no noun.

SYNTAX.   This, in Bloomfield's definition of the term, is almost terra incognita in American Indian linguistics.   Reichard gives an extensive presentation of word order and other syntactical matters in Coeur d'Alene which is, unfortunately, confused by two factors: an uncertainty as to just what composes a word and what comprises more than one word, and, as in the morphology, an organization by idea instead of by form.   Andrade gives a less complete but more clear view of Quileute sentence-formation; in the other grammars such material is left implicit or mixed in with morphology.   The section which Bunzel calls 'Syntax' actually contains a good deal of morphology also.

SEMANTICS.   No one yet has devised satisfactory methods for semantic analysis and for giving definitions to elements of a native vocabulary, though Voegelin, in the Miami and Shawnee dictionary which is now appearing,[3] makes an excellent beginning.   The heading is included here to classify the following comments: The translations of Hoijer and Wagner are almost always intelligible, those of Bunzel and Andrade are usually so, those of Reichard frequently are not.   A 'literal' rendering such as 'he was ear-sprinkled' (565), out of context, means practically nothing.   Hoijer follows an excellent plan in carefully supplementing ambiguous translations with a description of the context.

To summarize: This volume contains invaluable material on five important languages, but is unfortunately not the important landmark in American Indian language studies that one would like to find in a new volume of the famous Handbook series appearing after sixteen years.

[3] C. F. Voegelin, Shawnee Stems and the Jacob P. Dunn Miami Dictionary (Indiana Historical Society, Prehistoric Research Series 1.3 and 1.5); Indianapolis, 1938.

It is to be hoped that the last word has not yet been said on any of the five languages. At best the presentations are a little fuzzy at the edges. One feels, except in the case of Andrade, the lack of that methodological stringency which is so admirable a characteristic of the work of the volume's editor and of his best students. And in the case of Andrade the stringency seems mechanical. One must strike the happy medium: show 'tendencies' and 'variations' where they exist, but describe them in terms of stable points of reference. Otherwise one has detail without integration; one does not see the language for the words.

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DICTIONNAIRE ÉTYMOLOGIQUE DE LA LANGUE LATINE: HISTOIRE DES MOTS. By A. ERNOUT and A. MEILLET. Second edition, revised. Pp. xxii + 1184. Paris: Librairie C. Klincksieck, 1939.

The first edition of this invaluable work appeared in 1932. Meillet died in 1936, and it was Ernout's task to complete the revision alone. Meillet's part of the work was the comparative IE, and this part he had limited to equations that command general acceptance; few discoveries of importance have been made in this field since 1932, and Meillet would have wished to make few changes had he lived. Such is Ernout's judgment, in which we concur: in this part it was only necessary to correct accidental omissions and misprints, and bring up to date the bibliographical references. Ernout composed the specifically Latin part of the volume, and for the new edition had at his disposal further fascicles of the Thesaurus Linguae Latinae, and of Hofmann's revision of Walde's Lat. etym. Wörterbuch, and the completed third edition of Meyer-Lübke's Romanisches etym. Wrtb., as well as the literature of articles, reviews, and personal communications.

The new edition consists of 1143 pages of the dictionary proper and two pages (1183–4) of corrigenda, as against 1100 of the first edition, with 8 pages of addenda and corrigenda. It is enriched also by an Index (1145–82) of non-Latin words, amounting to between 8000 and 9000 items, prepared by Madame Meillet, to whom our appreciation is due, not merely for a valuable scholarly tool, but also for this tribute to her husband's memory.

The increase in the text (including additions and corrections) is 37 pages, and a careful comparison shows that the additions affect all parts of the work, except that under the letter Q, where the amount of text is unchanged. Seeing the difficulty of locating the new and changed

material (which is in scattered phrases or sentences, and an occasional new caption-word), I turn to my review of the first edition (LANG. 8.152-65), to see how much of it is not true of the second edition.

My remarks (154-5) on the use of the macron over vowels before intervocalic *i* remain true; thus in 579-80 we still have *maior* and *māiōrīnus*, though in this paragraph two macrons have been added in the first syllable, and four other macrons in later syllables of the words have been added where they were previously missing. Other corrected quantities are the *ō* of words beginning *cōns-* (213-5) and the *ī* of words beginning *īnf-* and *īns-* (486-91; only *infandus* remains without it), the *ī* of *disciplīna* (272), the *ū* in *palūdātus palūdāmentum* (726), the *ē* of *stēlla* (971), the *ī* of *uectīgalis uectīgal* (1078) and *uīdulus* (1106); but the macron is still lacking in the other words mentioned for this reason in my previous review, as well as in *uēscor* (given as *uescor* 1095), and all words beginning *cōnf-* (given as *conf-* 212).

On other points my critique has been quite as unsuccessful, or more so—which I take in good part, since etymology is a science which, after all, has much subjectivity. Only four of my points have, probably through the agreement of other critics, produced effect. 214, under *cōnsul*, Thurneysen's etymology (root **sel-* as in Gk. ἑλεῖν), accepted by Hofmann, is now mentioned, though disapproved, and reference is made to Boisacq[3] s.v., though Hofmann would be the more natural place of reference. 311, *etiam* is now taken as *et + iam*, instead of *eti + iam*. 813-4, *prōdigium* is now taken as containing *agō* in its second part, and no mention is made of *aiō* or of *digitus* (cited as possibilities in the first edition). 1142, Oscan **úíttiuf** is now quoted with the correct orthography, and the erroneous remark based on the false spelling is corrected. (The first-edition pages of these four passages are 206, 298, 776 top, 1099.)

With the aid of the Index I have examined the Hittite words, which, according to the Preface (xxi), may be identified in Sturtevant's Hittite Glossary, 1931. The second edition of the Glossary, published in 1936, is not mentioned in this connection! Now of the 47 entries in the Hittite list (1148-9), three of them appearing each twice, eleven words, with twelve page references, are new in the second edition of the DELL; two words are hieroglyphic Hittite, and not in either edition of Sturtevant's Glossary, and one word is found only in the second edition. The difficulty with them is, however, that the DELL uses a system of transliteration which varies considerably from that employed by Sturtevant, and makes it a considerable task to locate some of the words,

whose alphabetic position is altered by the change of system. Further, acc. *mahlan* 'pommier' (584; not 583 as in the Index) is to be identified with *mahlas* 'apple tree' of Sturtevant[1] 43; but Sturtevant[2] 95 glosses the word with 'vine branch', after Ehelolf OLZ 36.5 f., and this should have led to a deletion, or at least a warning remark, in the DELL.

The blemishes which I have mentioned, so far as they are blemishes, are unimportant in view of the great merits of the work, and I wish to refer here to my review of the first edition, and to say that all the good which I said there—and there was a great deal of it—is equally true of the second edition, which has the merits of its corrections and additions.

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DICTIONNAIRE ÉTYMOLOGIQUE DE LA LANGUE FRANÇAISE. By ALBERT DAUZAT. Pp. xxxvii + 762. Paris: Larousse, 1938.

We are rather well provided today with etymological dictionaries of the French language. In addition to the general Romance etymological dictionary of Meyer-Lübke there have appeared within the last ten years, confined to French only, dictionaries by Ernst Gamillscheg and Oscar Bloch, and the first fascicles of the work of Von Wartburg. Dauzat has made full use of his predecessors. His dictionary is offered to replace that of Léon Clédat, which has been published over a long period of time by Hachette and which is intended for the general scholarly public. M. Dauzat has done his task well; the book contains more words than most of its predecessors, and it is inexpensive.

There are, of course, numerous points on which many will disagree with Dauzat. He does not make use, for instance, of our American linguistic and philologic journals. In certain cases we might attribute this to disagreement; but there are instances where etymologies proposed by Americans are correct, beyond all question, and where Dauzat's choice is wrong. In this connection I should call attention to a few remarks of my own which appeared in LANGUAGE 10.280–5. There, among other words, I discussed *ailante*, the name of a tree. It is beyond any doubt a word borrowed from the Amboyna dialect of the Molucca islands. The latest edition of the Shorter Oxford Dictionary has this correct (although the big NED hesitated over the etymology). Dauzat gives for this: emprunt présumé au chinois (le prototype n'est pas clair). In this same article I called attention to the fact that the date 1563, given by the Dictionnaire général for the first occurrence in French of the word *thé* 'tea' is suspect. I have since examined the ms cited (which is more accessible to Dauzat than it is to me) and have

found that it is about a hundred years later than 1563 and that the
portion containing the word *thé* is a printed document inserted into the
ms.   M. Dauzat repeats the item as given in the Dictionnaire général.
No two scholars agree on all etymologies where positive proof is not
present.   I must take issue, however, with the statement that *deuil* is
reformed from *duel* 'grief' on the analogy of *œil*!   The Ernout and
Meillet Dictionnaire étymologique de la langue latine registers a form
dolium beside *dolus*.   Why is this not responsible for the surviving
French form?   Often a language will use one form over a long period,
almost to the exclusion of a doublet, and then that doublet will suddenly
come forward and replace the common form: compare *quelogne* eventu-
ally replaced by *quenouille*, both being derivatives of *colucula* from
colus 'distaff'.   In attesting the first occurrences of some marine words
such as *scare*, M. Dauzat does not seem to have made use of Rondelet's
Histoire entiere des poissons (French version, 1558), and he gives
slightly later dates for their first occurrences.   In the specific case of
scare he gives xvi s., Paré, meaning certainly that it is to be found in
Paré's treatise on marine animals published in 1573.   These points
mentioned are typical of the sort of material with which one may not
agree; but this dictionary is, on the whole, dependable and far-reaching
in its scope.

URBAN T. HOLMES, JR.

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EL ESPAÑOL EN MÉJICO, LOS ESTADOS UNIDOS, Y LA AMERICA CEN-
TRAL.   Con anotaciones y estudios de PEDRO HENRÍQUEZ UREÑA.
(Biblioteca de dialectología hispanoamericana del Instituto de Filología
de la Facultad de Filosofía y Letras de la Universidad de Buenos Aires.)
Pp. lxi + 526.   Buenos Aires, 1938.

The form of this book is decidedly novel.   The editor has adapted
with slight alterations, and translated into Spanish when necessary,
articles and theses by E. C. Hills, F. Semeleder, C. C. Marden, A. R.
Nykl, M. G. Revilla, K. Lentzner, C. Gagini, and R. J. Cuervo, to
which he has added four short articles of his own.   An important phase
of the editor's work is the elaborate series of notes which he has added
in brackets, at the foot of each page, commenting on the material of the
others.   An immense amount of labor has gone into this task and it is
doubtful whether the facilities for it could have been found anywhere
except at the Institute in Buenos Aires.   In many instances the editor
has been rather hard on the predecessor whose text he has adapted.

In any case this book will doubtless be an indispensable manual for those interested in the Spanish language in the new world.

As one might expect in such a book, there are occasional statements that could be bettered. It can hardly be said that most of the Germanic words in Spanish were present in common Vulgar Latin (84, note 1). See Der Einfluss der germanischen Sprachen auf das Vulgärlatein by Josef Brüch, Heidelberg, 1913. Furthermore, a general statement that *ai* as in *fait* was a diphthong in Old French (106) is not correct. In most Old French dialects the *ai* alternated with *e* quite regularly in the twelfth and thirteenth centuries. The editor speaks slightingly (225) of A. Marshall Elliott's little article on Náhuatl-Spanish which appeared in AJP 5 (1884), while admitting (325–6) that he has not seen it for many years and that this volume of the AJP is not available in Buenos Aires! In view of its early date this article does leave something to be desired; but it is as full as the editor's own discussion of the same topic on pp. 325–7 of this book. It is hardly accurate to refer to Nykl as an 'orientalista'. It is true that he has great professional competence in Arabic, and that he taught for a period at the Oriental Institute in Chicago, but he considers himself a Hispanist and it is in this capacity that he wishes to be employed.

The finest feature of this book I am mentioning last, for emphasis: it is the bibliography. The thirty-five pages devoted to this will be indispensable for years to come.

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KONJUNKTIONEN UND MODUS IM TEMPORALSATZ DES ALTENGLISCHEN. By HANS MÖLLMER. (Sprache und Kultur der Germanischen und Romanischen Völker. A. Anglistische Reihe, volume 24.) Pp. xii + 118. Breslau: Priebatsch's Buchhandlung, 1937.

This work is the product of Professor Wilhelm Horn's seminar at Berlin, and reflects the excellent tradition of that institution in its logical form and careful method. One's first reaction to Dr. Möllmer's study is to wonder how two such extensive topics, each the object of much intensive research in the past twenty years, could be treated in the brief scope of some hundred pages. One also questions whether any fresh contribution concerning either the conjunctions or the mood of the verb could be made without further intensive research. These questions are partly answered in recognizing that the monograph is rather an essay interpreting the results of previous research in this field than a dissertation in the accepted sense of the term.

Möllmer presents his material in three chapters: a brief sketch of the historical development of the subordinate clause (7 pages); a syntactical analysis of the principal temporal conjunctions in relation to the content of the main clause and the subordinate clause (90 pages); and a brief résumé of current opinion on the mood of the temporal clause (12 pages).

The remarks on parataxis and hypotaxis are not intended to contribute anything to the subject, but, as a part of the introduction, to prepare the way for the author's treatment of the separate conjunctions in the second chapter. He gives us the commonly held and often repeated views on hypotaxis that have been current for twenty years or more. (Cf. Delbrück, Brugmann, Rübens, et al.) The naïve and lengthy demonstration of how any subordinate conjunction (e.g., *þonne*, *ǣr*, *oþ*) might develop out of an adverb seems to the present reviewer entirely unnecessary.

The second and main chapter gives us a semantic and syntactical explanation of the temporal subordinate conjunctions in Old English. They are listed under the usual temporal relationships: time when or indefinite duration, *þā*, *þonne*, etc.; immediately antecedent action, *sōna swā*, etc.; co-extensive duration, *þā hwīle þe*, etc.; simple antecedent action, *siþþan*, etc.; subsequent action, *ǣr*, etc.; co-terminal point of time, *oþ þæt*, etc. To illustrate the shade of temporal meaning in each conjunction, the author selects from five to twenty OE examples for each meaning, quoting the Latin whenever it is available. He notes briefly the usually accepted etymology of the conjunctions and attempts to show some relation between the semantic and the syntactical development of each.

At first glance this treatment appears to be little more than a recapitulation of the work of such writers as A. Adams, M. Callaway, H. Glunz, O. Johnsen, and F. Behre,[1] because he leans heavily upon their writings for the examples and the syntactical analysis. It is to the credit of Adams and Callaway especially that their investigations

[1] A. Adams, The Syntax of the Temporal Clause in Old English Prose; New York, 1907 (Yale Studies in English 32).

M. Callaway Jr., The Temporal Subjunctive in Old English; Austin: The University of Texas Press, 1931.

H. Glunz, Die Verwendung des Konjunktivs im Altenglischen; Leipzig, 1929 (Beiträge zur englischen Philologie 11).

O. Johnsen, On Some Old English Adverbs and Conjunctions of Time; Anglia 38.83-100 (1914), 39.101-20 (1916).

F. Behre, The Subjunctive in Old English Poetry, 1934 (Göteborgs Högskolas Årsskrift 40).

were founded upon an exhaustive study of the Old English monuments, since between them they have probably brought to light every occurrence of the temporal clause. Möllmer justifies his repetition of the earlier scholarship by attempting a fresh interpretation of the development of the temporal subordinate conjunction. 'Methodisch aber schlägt diese Arbeit grundsätzlich einen neuen Weg ein. Während Adams mehr oder weniger beschreibend vorgeht, werden in dieser Arbeit die Konjunktionen nicht nur hinsichtlich ihres Vorkommens und ihrer Funktion, sondern in erster Linie entwicklungsgeschichtlich behandelt' (1).

As a matter of fact, Möllmer has based his study squarely upon Horn's hypothesis as expressed in his article on *þēah* in Archiv 154.213 (1928). Briefly, Möllmer has attempted to apply Horn's analysis of the conjunction *þēah* to all the conjunctions employed in the temporal clause, using Adams and Callaway for the examples and statistics. Although one may have great confidence in anything that Professor Horn advances, one cannot help feeling that our interpretation of the subordinate conjunctions in English is, in many respects, still in the realm of speculation. Möllmer's treatment of the conjunctions is more in the nature of demonstration than fresh analysis. He is, indeed, quite dogmatic at times in fitting each of the forty-odd temporal subordinate conjunctions into his pattern. It is too much to assume that all the temporal conjunctions developed in the same way as *þēah*, even if Horn's hypothesis, as set forth in the article mentioned above, is in all points correct.

What Horn contributed to our study of the subordinate conjunction was the insistence upon the recognition of semantic influences working along with the syntactical processes. He emphasized the continuity of the original force or meaning of the word *þēah*, maintaining that it survived the shifts in function and became the controlling element in the formation of the subordinate clause introduced by *þēah*, affecting even the choice of mood in that clause. It is by no means certain, however, that what Horn saw in the *þēah* clause would necessarily apply to other types of clauses. What happened in the *þēah* clause may have happened in SOME of the temporal clauses, but we know, for example, that the syntactical development of such forms as *lōc hwanne, hraþe þæs þe,* and *ǣr* calls up many points in syntax and semantics that are not encountered in *þēah.* Each conjunction will have to have much more detailed attention before we shall be willing to fit all into a mold as Möllmer has done.

Möllmer also claims originality in examining the Latin sources of OE translations to determine possible influence upon the temporal conjunctions and upon the mood of the temporal clause. In this matter he rests heavily upon Adams, Callaway, and Glunz, without, it seems to me, giving them sufficient credit. The question of Latin influence is a very vexed one in any case, and in view of the doubts raised by previous investigators, it will require more than the brief comparison with sources that Möllmer gives us to justify 'conclusions' on that subject.

Most of what Möllmer has in his brief third chapter on mood (99 ff.) is a recapitulation of the findings of the earlier writers, notably Glunz and Callaway. He reviews the well known classification of clauses into those with $\bar{æ}r$, which usually take the subjunctive, and those introduced by all the other conjunctions, which take principally the indicative. He examines again the interesting but baffling problem of the determining element that controls the mood of the subordinate clause. The twelve pages of this part is too short a space in which to develop any fresh contributions.

On the whole, Möllmer has given us an interesting and well documented review of the problems relating to the temporal clause in OE. He has perhaps attempted too much for the scope of a single dissertation. Only in the matter of the development of the conjunctions themselves has he advanced our knowledge to any degree. The bringing together and the sifting of the scholarship of the temporal subordinate conjunction is a useful piece of work, even though the actual advance is slight.

Möllmer's summary of his principal results contains many familiar items. (1) OE poetry contains many instances of asyndetic parataxis where one might expect temporal subordinate clauses. (2) Subordination may originate either from two independent coordinate clauses of which the second becomes subordinate to the first, or from three independent clauses of which the second becomes subordinate to the third. The temporal clause arises mainly from two-clause parataxis. (3) As for the temporal conjunctions, they develop from adverbs standing originally either at the beginning of the second clause (*þā, þonne, nū*), or at the end of the first clause which in the course of time became subordinate to the second independent clause (*swā, $\bar{æ}$r, þon*). (4) OE prose provides a far greater number of occurrences of adverbs and conjunctions showing temporal relationship than does the poetry. (5) OE *hwonne* had not reached the stage of a purely temporal conjunction, which it became in ME. (6) The *þonne*-clause occasionally

overlapped the function of *þā*, being used at times to point out a single definite event. (7) In the course of time words chosen to act as conjunctions between clauses gradually took on meanings not originally expressed by those words, for example, temporal to causal, *þā*, *syþþan*. (8) Two tendencies in form mark the development of OE conjunctions: that towards economy and conciseness (*æfter þon þe > æfter þon > æfter*), and the opposite tendency towards explicitness (*ob þæt > oþ þæt þe*). (9) Since subordinate clauses develop from independent clauses, the mood of the subordinate verb must have developed from the same influences that operated in the independent clause.

Although these nine points cannot be said to constitute fresh discoveries in the field of OE syntax, it would be unfair to judge the whole work through them. Möllmer has, under the various temporal subordinate conjunctions, given us many helpful suggestions and has performed a good service in throwing the light of Professor Horn's method upon another division of clause syntax.

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THE PHYSIOLOGY OF FRENCH CONSONANT CHANGES: A STUDY IN EXPERIMENTAL PHONETICS (University of Chicago Dissertation). By ERNEST FABER HADEN. Pp. 117, 136 figures and 5 tables. Language Dissertation No. 26, Supplement to Language 14.4, 1938.

Twenty radiographs and fifty-odd palatograms of two Frenchmen pronouncing a list of French words which embody the consonants and consonant groups found in (Vulgar) Latin, are examined to learn whether any peculiarities in modern French articulations could be made to explain historical changes, and might, therefore, be supposed to have been characteristic of the Gallo-French speech community down through the centuries. The dissertation proper is preceded by tables of phonetic symbols and definitions, unusually full, by an account of the author's point of view, and by description of the two subjects and of an improved technique with the artificial palate.

Haden's most fruitful demonstration is that generally speaking when a consonant is followed by [j] there is a broader area of tongue-palate contact than when either the consonant or the [j] is pronounced separately (75). Thus, [tj] is somewhat spread, and its [t] is retracted to the alveolar ridge; so that its area of contact will encroach on that occupied when [k] is fronted before any palatal vowel or [j]; and the slightest off-glide (necessarily [j]) from fronted [k̑] will produce actual overlapping of the areas to complete the practical identification of [k̑] and [tj], first

in the hearer's ear and presently in the articulation of the speaker. (I still prefer Sweet's descriptive term 'off-glide'; Haden calls it more vaguely 'friction'. He notes its presence in 'affricated' modern Fr. *qui*, but in general he takes too little account of the off-glides.)

The stages from then on are [tj] > [tʃ] (cf. modern F. *tiens, tiens!* fig. 19 and pp. 39–40) > [ts], the last a further fronting, according to Haden, since it occurs before *i* and *e* but not before *a*: *arcione* : *arçon*, *mercatu* : *marché, mercede* : *merci*. Haden thus assigns the sound [tʃ] to all these descendants of [k] and [tj] at one and the same point of time, an oversimplification: the series [tʃ] > [ts] must have been completed before another [tʃ] had developed out of initial [ka-], otherwise *cent, chien, chie, merci, marché* would all have had [ts] and would sound alike today. Continuing: at the stage [ts], surrounding vowels cause voicing to [dz] by 'laryngeal inertia'; hence (not noted by Haden, but worth stating) the development as far as [ts] was completed before (1) the cessation of the voicing of intervocalic surds, i.e., very early; (2) the reduction of 'long' consonants, also early; (3) the fronting of [a] toward [æ], which provided the condition for the development *ca-* > [tʃa-], before 800. Finally, [ts, dz, tʃ] lose the occlusive element, becoming [s, z, ʃ] (13th century) because the occlusive, according to Haden, interrupts 'the flow of speech' and its loss does not impair the 'auditory effect.' Neither statement explains the phenomenon, though both statements are true enough. What we have is the very simplest sort of assimilation, which in French is regularly toward the last consonant of a group.—It may not be possible to explain both [tʃ] > [ʃ] and [ts] > [s] by the same formula: for one thing, in many districts the occlusive is retained in [tʃ] to this day.

The history of [g] before *i, e* begins with 'evidence of the tendency toward [dj],' and eventually 'doubtless' [dʒ], which Haden writes [ḍ] and equates with the resultants from initial [j] (*jam*), [dj] (*diurnu*), sometimes spelled with Greek zeta (*zebus* for *diebus*); all of them giving [dʒ] initial, but 'relaxed' to [j] intervocalic. This series can be made to fit the phenomena; it is simpler, however, and hence better to assume (1) [g] before *i, e* > [j] everywhere; (2) [-dj-] > [j] intervocalic, which remains unchanged; then (3) every initial [j-] > [dj-], falling in with original [dj-] and with Greek ζ, all these becoming (4) [dʒ], then (5) [ʒ].

The question, Why not [dʒ] > [dz] as [tʃ] > [ts]? seems not to have imposed itself. Its discussion would have illuminated the whole subject.

Results yielded by the other experiments are admittedly less satis-

factory, for a variety of reasons, and recourse must be had, after all, to speculative phonetics. Thus, in *faciam* : *fasse* 'affricate stages seem to have been prolonged articulations' offering 'resistance to voicing' (59–60); here we need a more thoroughly developed theory of the syllable than Haden gives (19–20); *mansione* : *maison* and the like are 'cases of anticipation' of [j] (88). Subject B did not have a tongue-point [r]; he 'believed that he did not know how to produce [ʎ]' and his palatograms show [ŋ] instead of [ɲ].

In these last two cases, (*l* and *n* mouillés), Haden is on the verge of a useful conclusion which he is kept from drawing by too high a regard for pedagogical phonetic dogma. The facts emerging (68–88) are that the group [l] + [j] (from any source) either keeps the [l], or losing it, becomes simply [j], in spite of Littré's valiant stand in his Dictionary; and that [n] + [j] (from any source), if it develops at all, results in [ŋ], fronted, like any 'guttural', as in E. *stringy* [strɪŋi]. The impossibility of using such a chimera as [ɲ] in actual everyday speech is obvious from the radiographs in which subject A makes the schoolroom tour de force (fig. 99).—A real French word, and a familiar one, such as *oignon*, which I transcribe [əŋ'ɔ̃], would have been preferable to the nonsense-word 'ougnou' for the experiments.

Phonetic writing, especially as applied to French, could stand a lot of such weeding out. Haden uses 57 different symbols, many of them more trouble than help: no matter how many symbols we use, they are but crude approximations to what we hear; diacritics would be more transparent and flexible than distinct letters.

Traditional notation is retained in [ɛ̃] for [æ̃] as in F. *pain*, and [ɔ] for what Dauzat calls the amuïssement [ə] as in F. *robe*, corrections old enough in the literature of historical French grammar to be familiar (cf. A. Lloyd James, Historical Introduction to French Phonetics, London, 1929; L. E. Armstrong, The Phonetics of French, London, 1932). More than a generation ago Passy heard [-e] ('néologisme: Paris') in *balai* and the like (Haden gives F. *paix* as an example of open *e*). These matters might be more safely ignored if they were not intimately involved in the whole picture of French phonetic changes.

The 'gutturals' in Haden's experiments appear to me to be farther front than he supposes ('Descriptive Table of Consonant Sounds' 9–10; cf. radiographs figs. 116, 118, 120), a matter worth studying as perhaps related to the fronting of *a*, *o*, *u*, at various periods—cf. the fronting of [ɔ] to [ə] in *robe, coton*; furthermore, it is increasingly difficult to hear [ɑ] as in *je ne sais pas*: [pɑ] is becoming [pa] even in Paris. These

observations would justify a preliminary theory, at least, that French articulation still tends to move forward in the mouth: if true, one of the characteristics that Haden is looking for.

Validity of Haden's results for the purpose intended depends on how closely the norm of that linguistic mass which lacks conspicuous dialectal eccentricities or artificial adaptations, and speaks without self-consciousness, has been approached by subjects A and B in their recordings. Technical difficulties as well as individual peculiarities of the subjects affect the results. Thus, although radiographs are much more informing than palatograms, to hold the articulations motionless for seventwentieths of a second introduces abnormal corrections, damming up of breath, and other distortions (fig. 26 [g] more tense than [k]; figs. 37, 78, 79, cf. lips and jaw) which make the radiographs less reliable. Subject B, who made the palatograms, is the son of a native Parisian (a lawyer) and a Russian woman: his was therefore an environment in which relatively careful, trained, conscious speech must have been the rule. While B's speech is much less pedantic than A's, it can hardly be free from artificial refinement imposed by his parents, and by long educational or other associations which the masses who dominate linguistic history never know. It will be difficult to detect the forces making for phonetic change, so long as we examine only persons accustomed to speak by the book (at least while being quizzed). It is to be hoped that Professor Haden may be able to extend his important and interesting research to include less formal speakers. For a historical study it would be especially valuable to have dialect data from districts (e.g., Artois) where ancient written records provide means of verifying theoretical deductions.

<div align="right">HENRY DEXTER LEARNED</div>

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NOTES AND PERSONALIA

THE LINGUISTIC SOCIETY OF AMERICA will hold its Third Special Summer Meeting at Ann Arbor, July 26-7, 1940, in connection with the session of the Linguistic Institute.

THE MEXICAN COUNCIL FOR INDIGENOUS LANGUAGES (Consejo de Lenguas Indígenas) was formed in May 1939 for the purpose of directing and coordinating the work of research and investigation which is being carried on in the field of Mexican Indian languages. The affairs of the Council are in the hands of an Executive Committee composed of a Director (Dr. Morris Swadesh), a Vice-Director (Prof. Wigberto Jiménez Moreno), and a Secretary (Prof. Barrera Vásquez), and of a committee of patron organizations which appoints the Executive Committee and contributes financially and otherwise to the furthering of the aims of the Council. Each of these patron organizations appoints a representative on the Council, who has one vote in the deliberations and decisions of policy of the Council. These representatives of the patron organizations constitute the Committee of Patrons, which in the intervals between meetings delegates the authority to make decisions on business of the Council, to the Executive Committee.

The Council for Indigenous Languages will publish a journal, with the title Lenguas Indígenas, and will establish and maintain a library and a system of exchange of publications, information, and scientific workers, with other scientific organizations. It will cooperate with (but will function independently of) the Mexican Department of Indian Affairs in its work of cultural elevation of the Mexican Indian tribes, and will place the alphabets which its workers create for the native languages, as well as the linguistic studies which are made of these by Council workers, at the disposal of the Department of Indian Affairs in return for the financial and other support which the Department renders to the Council.

The Council will take especial interest in and encourage specifically the studies of the obsolescent Indian languages, in view of the importance of such studies for comparative and historical linguistics, although they are not immediately and directly important for the work of the Mexican government.

The patron organizations are the (Mexican) Department of Indian Affairs, the (Mexican) National Institute of Anthropology and History, the Pan-American Institute of Geography and History, and the Departments of Linguistics and of Anthropology of the (Mexican) National Polytechnic Institute.   To these, by the action of the Society on December 28, 1939, the LINGUISTIC SOCIETY OF AMERICA is now added, with Mr. Norman A. McQuown as its representative on the Council.

THE AMERICAN DOCUMENTATION INSTITUTE announces that the non-receipt by a subscriber, of any European scientific journal seriously needed as research material, should be promptly reported to the Institute.

The Cultural Relations Committee of the ADI, which cooperates closely with the Cultural Relations Division of the United States Department of State, is working on this problem, and hopes to be able to overcome such war obstacles as interrupted transportation, embargoes, and censorship, which so grievously affected the progress of research during the war of 1914–8.   It seeks, if possible, to establish the principle that the materials of research having no relation to war shall continue to pass freely, regardless of the countries of origin or of destination.

Reports on journals not received, with full details of where the subscription was placed, the name and address of the subscriber, and the volume, number, and date of the last issue received, should be addressed to the American Documentation Institute, Bibliofilm Service, care of the U. S. Department of Agriculture Library, Washington, D. C.

A PHONEMIC WORKSHEET has been prepared by Kenneth L. Pike for pedagogical purposes.   Blank spaces on a chart allow ready phonetic classification of speech sounds.   Instructions on the reverse side set forth an inductive method designed to be used with the chart, to enable the beginning student to reclassify the phonetic data of a language in such a way as to discover the phonemes.   The Worksheet has speeded up the learning process considerably in two summer sessions of the Summer Institute of Linguistics (Siloam Springs, Ark.), where the author has taught phonemic method by having students analyze "Concentrated Languages," short word-lists and brief texts containing all pertinent phonetic-phonemic phenomena of a language, real or hypothetical.   The originality claimed for the Worksheet is, first, the chart with the adaptation of phonemic method to it, and, secondly, certain ideas in the section on prosody which the author plans to develop in later writings.

A limited number of copies are available, without charge, to members of the Linguistic Society of America, obtainable by writing to the Secretary of the Society.

PROF. JAKOB WACKERNAGEL, our late Honorary Member (died May 22, 1938), left among his papers a draft of a letter marked "Brief an Bloomfield 17. X. 1884", a copy of which is transmitted to us by Prof. A. Debrunner, also an Honorary Member of our Society. As Debrunner remarks in an accompanying letter, we know little of the composition of Wackernagel's Altindische Grammatik: the first volume (1896) has no foreword, but is dedicated to Prof. Adalbert Kuhn (1846–1920); the second (1905) has a short foreword, in which inter alia we learn that Kuhn read the proofsheets of both volumes. There is in it no hint that Kuhn was originally intended to be a collaborator. Nor do we know from other sources that Prof. Maurice Bloomfield (1855–1928), one of the founders of our Society, ever seriously contemplated the writing of a Sanskrit Grammar; but he seems to have talked over the idea with some one, or Brugmann would hardly have mentioned his project to Wackernagel. The letter now follows:

Hochgeehrter Herr Kollege!

Die Freundlichkeit, die Sie mir bis jetzt gezeigt, gibt mir die Mut, mich an Sie zu wenden. In der Lage, in welcher ich mich befinde, müsste ich es freilich auch tun, wenn ich nachsichtiger Aufnahme meiner Anliegens nicht sicher wäre. Ich möchte Sie nämlich infolge einer Mitteilung, die ich kürzlich von Professor Brugmann erhielt, fragen, ob Sie wirklich mit der Abfassung einer Sanskritgrammatik von linguistischem Standpunkt beschäftigt sind und welcher Art in diesem Fall das von Ihnen geplante Werk sein soll. Ich würde mich scheuen, eine solche Frage an Sie zu stellen, wenn ich nicht an Aehnlichem arbeitete. Vor zwei Jahren verabredete ich mit Prof. Kuhn die gemeinsame Ausarbeitung seiner Sanskritgrammatik, worin zu bequemer Uebersicht alles zusammengestellt wäre, was bis jetzt für die sprachwissenschaftliche Erklärung des Altindischen geleistet worden ist. Vollständigkeit und Genauigkeit der bibliographischen Nachweise hatten wir besonders im Auge. Ich übernahm, obgleich meine Berufspflichten als Professor der griechischen Literatur mir für dergleichen wenig Zeit übrig lassen, in der Meinung, dass die Sache keine Eile habe, die Exzerpierung des grösseren Teils der in Betracht kommenden Literatur und habe bis jetzt insbesondere die Arbeiten Bopps und Benfeys, freilich noch nicht ganz, durchgenommen. Ich dachte, da ich von jetzt

an in der Zeit etwas freier bin, in etwa einem Jahr das Wichtigste hinter mir zu haben.   Dann hätte ich unter Zuziehung der von Kuhn gemachten Exzerpte die Ausarbeitung an der Hand genommen.   Manches im Plan, ob z. B. die Zeugnisse der indischen Grammatiker auch einverleibt werden sollen, blieb bis jetzt unverabredet.

Wenn nun das Wesentliche von dem, was wir zu leisten vorhatten, durch Ihr Buch, das wohl bald erscheinen wird oder schon im Erscheinen ist, geleistet wird, verzichten wir natürlich auf unsern Plan.   Vielleicht aber haben beide Werke neben einander Raum.   Oder endlich liegt die Sache so, dass Ihnen einiges von meinem Material dienen kann. Dass ich zu einer Konkurrenz mit Ihnen weder Kraft noch Lust in mir spüre, werden Sie begreifen.   Ich bin überhaupt nur auf Professor Kuhns Antrieb zu diesem Unternehmen gekommen, kann aber sagen, dass, wenn ich jetzt auch genötigt wäre, meine Sammlungen zu vernichten, ich doch die dafür aufgewandte Mühe nicht als völlig verloren betrachten würde; sie war mit vieler Belehrung und auch mit Genuss für mich verbunden.

Dies mein Anliegen.   Wie wichtig mir eine gütige Antwort von ihnen wäre, brauche ich nicht beizufügen.

<div style="text-align: center;">Ihr in vorzüglicher Hochachtung ergebener
JW.</div>

JAMES WICKERSHAM, a Foundation Member of the LINGUSTIC SOCIETY OF AMERICA, from which he resigned at the end of 1932, died at Juneau, Alaska, October 24, 1939, at the age of eighty-two years.

He was born at Patoka, Illinois, August 24, 1857, and was admitted to the bar in 1880, practicing law in the State of Washington; he was probate judge in Pierce County 1884–8, city attorney of Tacoma 1893, and member of the state legislature 1898.   In 1900 he went to Juneau under appointment of President McKinley, as judge of the Third Judicial District of Alaska.   He had a foremost part in the development of the Territory, and was its delegate to the United States House of Representatives 1909–21 and 1931–3.   He was author of a number of volumes relating to Alaska, and was a member of a number of learned societies.

THE FOLLOWING NEW MEMBERS FOR 1939 were received into the LINGUSTIC SOCIETY OF AMERICA subsequent to the last published list: W. R. Barrett, J. E. Bernard, Miss E. J. Dearden, D. A. Griffin, H. M. Hoenigswald, W. W. Langebartel, G. H. Marsh, G. C. Miles, J. H.

Neumann, A. E. Olson, C. E. Reed, K. S. Roberts, L. W. Seifert, D. C. E. Swanson, G. E. von Grunebaum; their academic affiliations and their addresses are printed in Bulletin No. 13, in the List of Members for 1939.

The following have been received into the Society as members for 1940, up to January 5, 1940:

Robert L. Beare, Swarthmore College, Swarthmore, Pa.; *Germanics, semantics.*

Robert M. Berry, Assistant in German, Brown University; Marston Hall, Brown University, Providence, R. I.

Mrs. Eunice Mason Blaser, A.B., 512 W. 122nd St., New York City.

Julian Hugo Bonfante, Visiting Professor of Romance Linguistics, Princeton University; Prospect Apts. D-2, Princeton, N. J.; *Indo-European.*

Rev. John Joseph Gavigan, M.A., Instructor in Latin, Villanova College; St. Mary's Hall, Villanova, Pa.

Lawton M. Hartman III, B.S., Assistant in Chinese, Yale University; 69 Howe St., New Haven, Conn.

Anna Granville Hatcher, Ph.D., Instructor in French Literature, Johns Hopkins University; 1208 Bolton St., Baltimore, Md.

Heinrich R. Kahane, Ph.D., Teaching Fellow in Comparative Literature, University of Southern California, Los Angeles, Calif.; *Mediterranean linguistic geography.*

Renée Kahane-Toole (Mrs. H. R. Kahane), Ph.D., University of Southern California, Los Angeles, Calif.; *Mediterranean lingustic geography.*

William R. Lansberg, A.B., Instructor in French, University of North Carolina; Faculty Club, Chapel Hill, N. C.

Joseph A. Maurer, M.A., Instructor in Latin, Moravian College, Bethlehem, Penna.

William G. Moulton, B.A., Instructor in German, Yale University; 81 Mansfield St., New Haven, Conn.

Helaine H. Newstead, Ph.D., Instructor in English, Hunter College; 118 East 93rd St., New York City.

William A. Read, Ph.D., Professor of English, Louisiana State University, University, La.

William J. Roach, Ph.D., Assistant Professor of Romanic Languages, University of Pennsylvania, Philadelphia, Pa.; *Old French.*

Francis Millet Rogers, A.B., Instructor in French, Harvard University; 28 Langdon St., Cambridge, Mass.

James Torrance Rugh Jr., M.A., Instructor in German, Temple Uni-

versity; Box 398, Temple University, Philadelphia, Pa.; *Middle High German.*

John Norman Seaman, J.D., Lawyer, 218 N. Jenison Ave., Lansing, Mich.; *American Indian and Bantu languages.*

Leslie C. Tihany, Ph.D., Fellow of the American Council of Learned Societies, for Research in Finno-Ugric; 85 Prescott St., Cambridge, Mass.

PUBLICATIONS RECEIVED

Under this heading is acknowledged the receipt of such works (books, monographs, bulletins, reprints of articles, issues of periodicals) as appear to bear on the scientific study of language. The publicity thus given is regarded as a full return for the presentation of the work. Under no circumstances is it possible to comply with the requests of certain publishers for the return of books not promptly reviewed. Reviews will be published as circumstances permit; and copies will be sent to the publishers of the works reviewed.

For further bibliographical information consult the annual list of Exchanges.

ACTA LINGUISTICA 1.1–80 (1939). Copenhague: E. Munksgaard.

ACTA PHILOLOGICA SCANDINAVICA 13.1–260 (1939).

AEGYPTUS 19.1–388 (1939).

ALTENGLISCHES ELEMENTARBUCH. By MARTIN LEHNERT. (Sammlung Göschen 1125.) Berlin: Walter de Gruyter & Co., 1939.

ALTKIRCHENSLAVISCHE STUDIEN. I: Fehlübersetzungen im Codex Suprasliensis. By KARL H. MEYER. Halle (Saale): Max Niemeyer, 1939.

AMERICAN SPEECH 14.83–240 (1939).

ANTHROPOS 33.747–1032 (1938).

L'ANTIQUITÉ CLASSIQUE 8.1–345 (1939).

ARCHIV FÜR DAS STUDIUM DER NEUEREN SPRACHEN 175.1–288 (1939).

ARCHIV FÜR ORIENTFORSCHUNG 12.319–424 (1939).

ARCHIV ORIENTÁLNÍ 11.1–202 (1939).

ARKIV FÖR NORDISK FILOLOGI 54.161–380; 55.1–196 (1939).

L'ARTICLE EN RUSSE. By C. RACIVITĂ. Pp. 53. Paris: E. Droz, 1939.

L'ASPECT VERBAL ET L'EMPLOI DES PRÉVERBES EN GREC, PARTICULIÈREMENT EN ATTIQUE. By J. BRUNEL. (Collection linguistique publiée par la Société de Linguistique de Paris, xlv.) Pp. 296. Paris: Librairie C. Klincksieck, 1939.

A BASIC PHONETIC READER. By A. LLOYD JAMES. Pp. 198. London: Thomas Nelson and Sons, 1937.

DIE BEZEICHNUNG 'DUX' IN DER POLITISCHEN TERMINOLOGIE VON CICERO BIS JUVENAL. By ERNST KNIERIM. Pp. 46. Giessen: Heinz Meyer, 1939.

BIBLICA 20.121–480, 19*–133* (1939).

BOLLETINO DELLE PUBBLICAZIONI ITALIANE, Nos. 452-9 (1939).

BULLETIN OF THE SCHOOL OF ORIENTAL STUDIES (University of London) 10.1-275 (1939).

THE CLAUSULAE IN THE WORKS OF ST. GREGORY THE GREAT. By SISTER KATHLEEN BRAZZEL. (Studies in Medieval and Renaissance Latin Language and Literature 11.) Pp. 82. Washington: Catholic University of America Press, 1939.

CONTRIBUTIONS À LA LINGUISTIQUE DES NOMS D'ANIMAUX EN INDO-EUROPÉEN. By ELISABETH RAUCQ. (Rijksuniversiteit te Gent, Werken uitgegeven door de Faculteit van de Wijsbegeerte en Letteren 88.) Pp. xiv + 109. Antwerpen: De Sikkel, 1939.

CONTRIBUTIONS À L'ÉTUDE DU HARARI. By M. WOLF LESLAU. (Extrait du Journal Asiatique 1937.431-606.) Paris: Geuthner.

DIALECT NOTES 6.18.709-42 (1939). New Haven: Tuttle Morehouse & Taylor.

THE ḌUMĀKI LANGUAGE. Outlines of the speech of the Ḍoma, or Bērīcho, of Hunza. By Lt. Col. D. L. R. LORIMER. (Comité International Permanent de Linguistes: Publications de la Commission d'Enquête Linguistique, III.) Pp. xvi + 244. Nijmegen: Dekker & van de Vegt N. V., 1937.

EDMOND PUXI MICHEL; LES PRÉNOMS ET LES SURNOMS DE TROIS ENFANTS. By ANTOINE GRÉGOIRE. (Bibliothèque de la Faculté de Philosophie et Lettres de l'Université de Liège, Fasc. 86.) Pp. 188. 1939.

ENGLISCHE STUDIEN 73.161-320 (1939).

ENGLISH STUDIES 21.49-238 (1939).

FILOLOGU BIEBRĪBAS RAKSTI 19.1-221 (1939).

FOLKMÅLSSTUDIER, meddedelanden fråm Föreningen för Nordisk Filologi i Helsingfors, Årgång 6 (1939). Helsingfors: Akademiska Bokhandeln, and Stockholm: Björk & Börjesson.

A GRAMMAR OF LAKOTA, THE LANGUAGE OF THE TETON SIOUX INDIANS. By EUGENE BUECHEL. Pp. vi + 374. St. Francis, S. D., 1939.

GRAMMATIK DER JABÊM-SPRACHE AUF NEUGUINEA. By OTTO DEMPWOLFF†. Pp. xi + 92. Hamburg: Friedrichsen, de Gruyter & Co., 1939.

GRAMMATIK DES DUALA (KAMERUN). By JOHANNES ITTMAN. (Beihefte zur Zeitschrift für Eingeborenen-Sprachen, 20.) Pp. 250. Berlin: Dietrich Reimer, 1939.

GROUPES LINGUISTIQUES D'ÉTUDES CHAMITO-SÉMITIQUES. Comptes-Rendus des Séances 1939.

HANDBOOK OF THE LINGUISTIC GEOGRAPHY OF NEW ENGLAND. By

HANS KURATH with the collaboration of †MARCUS L. HANSEN, JULIA BLOCH, BERNARD BLOCH. Pp. xii + 240. Providence: Brown University, 1939.

HARVARD JOURNAL OF ASIATIC STUDIES 4.1–212 (1939).

HESPÉRIS 25.289–397; 26.1–111 (1938–9).

INDIAN CULTURE 5.357–452 (1939).

INDIANA HISTORICAL SOCIETY PREHISTORY RESEARCH SERIES 1.173–239, 289–341 (1939).

INDOGERMANISCHE FORSCHUNGEN 57.1–160 (1939).

INDOGERMANISCHES JAHRBUCH. By ALBERT DEBRUNNER und WALTER PORZIG. (Bibliography of the year 1937.) Pp. 493. Berlin: Walter de Gruyter & Co., 1939.

ITALICA 16.1–160 (1939).

ITALIENISCHE MARINEWÖRTER IM NEUGRIECHISCHEN. By RENÉE KAHANE. (Estratto dall' Archivum Romanicum 22.4.) Pp. 78. Firenze: L. S. Olschki, 1939.

JEWISH QUARTERLY REVIEW 30.1–219 (1939).

JOURNAL DE LA SOCIÉTÉ DES AMÉRICANISTES 30.220–513.

JOURNAL OF THE POLYNESIAN SOCIETY 48.1–166, Memoir Supplements Nos. 15–6 (1939).

JOURNAL OF THE ROYAL ASIATIC SOCIETY OF BENGAL 4 (1938). Science 1.

DER JUNGATTISCHE DITHYRAMBOS. By HELMUT SCHÖNEWOLF. Pp. 71. Giessen: Heinz Meyer, 1938.

LATIN SOURCES OF BERCEO'S SACRIFICIO DE LA MISA. By HOWARD LESHER SCHUG. (Contributions to Education published under the direction of the George Peabody College for Teachers, No. 171.) Pp. xi + 112. Nashville: Peabody College, 1936.

LEUVENSCHE BIJDRAGEN 30.81–147, Bijblad 53–91; 31.1–99 (1939).

LINGUA NOSTRA 1.1–32 (1939). Firenze: G. C. Sansoni.

LINGUISTISCHE STUDIEN II. Essais de linguistique indo-européenne. By GEORGE VAN LANGENHOVE. Pp. xvii + 151. (Publications de l'Université de Gand, No. 87.) Antwerpen: De Sikkel, 1939.

THE LINK, No. 2 (1939). Oxford: B. Blackwell.

A LIST OF ENGLISH, SCANDINAVIAN, AND GERMAN THESES IN THE UNIVERSITY OF LONDON. By A. H. SMITH and A. T. HATTO. (London Mediaeval Studies, Monograph 2.) Pp. viii + 40. 1939.

LE MAÎTRE PHONÉTIQUE, April–September 1939.

MAN, Nos. 52–183 (1939).

MEDITERRANEAN STUDIES I–V. By GEORGE HEMPL. Stanford University Press, 1930–2.

MÉLANGES DE LINGUISTIQUE OFFERTS À CHARLES BALLY. Pp. xii +
511. Genève: Georg et Cie., 1939.

LE MUSÉON 52.1–198 (1939).

MYTHES ET DIEUX DES GERMAINS. By GEORGES DUMÉZIL. Pp. xvi +
159. Paris: E. Leroux, 1939.

NAMN OCH BYGD 26.113–204 (1938).

NAREČJE VASI SELE NA ROŽU. By A. V. ISAČENKO. Pp. 149. Lju-
bljana, 1939.

NEOPHILOLOGUS 24.81–320 (1939).

NEW INDIAN ANTIQUARY 1.697–752; 2.1–254 (1939).

NORSK RIKSMÅLSORDBOK 2.897–1152. By TRYGVE KNUDSEN and ALF
SOMMERFELT.

NOTATIONES NORROENAE. By ERNST A. KOCK. (Lunds Universitets
Årsskrift.) Pp. 60. Lund: C. W. K. Gleerup, 1938.

ONZE TAALTUIN 7.321–84; 8.1–192 (1939).

ORIENTAL LITERARY DIGEST 2, Nos. 9–12; 3, Nos. 1–2 (1939).

DIE PARENTHESE IM ENGERN UND IM WEITERN SINNE. By EDUARD
SCHWYZER. (Abh. d. pr. Akad. d. Wiss., Jrg. 1939, phil.-hist. Kl.,
Nr. 6.) Pp. 46.

THE PATTERN OF SOUND IN LUCRETIUS. By ROSAMUND E. DEUTSCH.
Pp. 188. Bryn Mawr dissertation, 1939.

PHILOLOGICAL QUARTERLY 18.97–416 (1939).

REPRINTS of articles and reviews, by H. B. ALLEN, G. BJORCK, J.
BLOCH, G. BONFANTE, K. BOUDA, W. BRANDENSTEIN, M. COHEN,
J. COLLART, A. DEBRUNNER, A. W. DE GROOT, G. DE HEVESY, F.
DELATTE, B. FADDEGON, E. FRAENKEL, A. GEMELLI, J. GONDA, L. H.
GRAY, MARY R. HAAS, R. A. HALL JR., Z. S. HARRIS, E. HAUGEN,
E. HERMANN, J. B. HOFMANN, L. HOMBURGER, A. ISSATCHENKO, R.
JAKOBSON, H. JENSEN, H. KOZIOL, M. LEROY, K. LITZENBERG, J.
LUKAS, A. MIRAMBEL, E. R. MOSES, L. R. PALMER, F. PEETERS,
H. PENZL, R. PIPPING, V. PISANI, W. A. READ, E. RICHTER, E.
RIESS, D. M. ROBINSON, M. RUNES, C. R. SANKARAN, A. SENN,
F. W. SHIPLEY, W. SIMPSON, F. SLOTTY, F. SPECHT, E. H. STURTE-
VANT, L. TESNIÈRE, G. L. TRAGER, B. TRNKA, A. B. VÁZQUEZ,
C. F. VOEGELIN, E. WADSTEIN, J. WEISWEILER.

REVUE DES LANGUES ROMANES 68.199–293 (1938).

A SERBO-CROAT PHONETIC READER. By DENNIS FRY and ĐORĐE
KOSTIČ. Pp. viii + 127. London: University of London Press,
1939.

SLAVIA 16.161–640 (1939).

SMITHSONIAN INSTITUTION, BUREAU OF AMERICAN ETHNOLOGY, Bulletin
101: War ceremony and peace ceremony of the Osage Indians, by
FRANCIS LA FLECHE; pp. 280; 1939.—120: Basin-plateau aboriginal
sociopolitical groups, by JULIAN H. STEWARD; pp. 346; 1938.—121:
Archaeological remains in the Whitewater district of Eastern Arizona:
Part I, House types, by FRANK H. H. ROBERTS JR.; pp. 276; 1939.—
122: An Archaeological survey of Wheeler Basin on the Tennessee
River in Northern Alabama, by WILLIAM S. WEBB; pp. 214; 1939.—
123: Anthropological papers, by T. and M. GANN, A. J. E. CAVE,
T. MICHELSON, R. L. IVES, J. R. SWANTON, V. PETRULLO; pp. 305;
1939.—124: Nootka and Quileute music, by FRANCES DENSMORE;
pp. 358; 1939.—125: Ethnography of the Fox Indians, by WILLIAM
JONES; pp. 156; 1939.

SMITHSONIAN PUBLICATIONS No. 3543 (1939).

SOME UNDESCRIBED LANGUAGES OF LUZON. By MORICE VANOVER-
BERGH, C.I.C.M.   (Comité International Permanent de Linguistes,
Publications de la Commission d'Enquête Linguistique, III.) Pp.
200, with 2 folding maps.   Nijmegen: Dekker & van de Vegt N.V.,
1937.

THE SOUTH CAROLINA SPEECH BULLETIN 1.1-34 (1939).

SPECULUM 14.136-514 (1939).

SPEECH DEVELOPMENT OF A BILINGUAL CHILD; A LINGUIST'S RECORD.
Vol. 1: VOCABULARY GROWTH IN THE FIRST TWO YEARS. By WERNER
F. LEOPOLD.   Pp. xiv + 188.   Evanston: Northwestern University,
1939.

SPRACHLICHES ZUR URHEIMAT DER INDOGERMANEN.   Von F. SPECHT.
(Reprint from Zs. f. vgl. Sprw., begr. v. A. Kuhn.) Pp. 74.   1939.

TAAL EN LEVEN 2.4-5.101-69; 3.2.41-80 (1939).   Koninginnegracht 75,
's Gravenhage.

TIJDSCHRIFT VOOR NEDERLANDSCHE TAAL- EN LETTERKUNDE 59.1-80
(1939).

TRANSACTIONS OF THE PHILOLOGICAL SOCIETY 1939.   London: David
Nutt, 1939.

TRAVAUX DU CERCLE LINGUISTIQUE DE PRAGUE, Vols. 7-8 (1939).

UNTERSUCHUNGEN ZUR AKADEMISCHEN BERUFSSPRACHE IN ENGLAND.
By ALBERT DIENST.   (Giessener Beiträge zur deutschen Philologie,
No. 52.)   Giessen, 1937.

WERDEN UND WESEN DER DEUTSCHEN SPRACHE.   By GEORGE NORD-
MEYER.   Pp. viii + 120.   New York: Farrar & Rinehart, 1939.

ZEITSCHRIFT FÜR CELTISCHE PHILOLOGIE 21.205-372 (1939).

ZEITSCHRIFT FÜR EINGEBORENEN-SPRACHEN 29.161-320 (1939).

EVIDENCE FOR VOICING IN INDO-HITTITE γ

E. H. Sturtevant

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[Of the four laryngeals assumed by the author for Indo-Hittite, three (two glottal stops and *x*) were clearly voiceless. This paper assembles the evidence that the fourth laryngeal (γ) was voiced.]

Linguists are generally aware of the confirmation from Hittite of de Saussure's doctrine that the long vowels not due to ablaut resulted from the loss of certain following consonants.[1] Most linguists, furthermore, are familiar with Sapir's assumption[2] of four laryngeals as the consonants that lie behind the full-grade vowels of the heavy bases, namely: (1) a glottal stop of palatal color (written '), (2) a glottal stop of velar color (written *?*), (3) a voiceless velar spirant (written *x*), and (4) a voiced velar spirant (written γ).

Others beside Sapir have held that the last named consonant or, at any rate, the corresponding consonant in their several systems, was voiced,[3] and some evidence has been adduced, but the thesis has scarcely been proven. The purpose of this article is to bring together all the evidence that I know of at the moment. I shall number the items for convenience, although they are of very unequal value.

1. The most weighty argument is that Hitt. *ḫ(ḫ)* and *ḫ* are opposed

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[1] De Saussure, Mémoire sur le système primitif des voyelles indo-européennes (1879). The Hittite evidence was pointed out by Kurylowicz, Symbolae Grammaticae in Honorem Ioannis Rozwadowski 95–104 (1927). For a fuller statement of his views, see his Études indoeuropéennes 1.27–76, 254 f. (1935), which he has supplemented in Prace filologiczne 17.90–6 (1937).

[2] See especially Lang. 14.269–74, 15.181 fn. 2. I take this opportunity to correct three errors in the latter passage, for which I am responsible rather than the author, since I read the proof. In line 2, for **?e-*, read: **'e-*. In line 10, for **γρ*, read: **γọ̄*. In line 14, for *ḷ, ṛ*, read: *ḷ, ṝ*.

I shall elsewhere undertake to prove what in this paper is assumed, namely, that the four laryngeals were present in Indo-Hittite, but were lost (leaving various traces) in the Pre-Indo-European period.

[3] Couvreur, De Hettitische *Ḥ*, een bijdrage tot de studie van het Indo-Europeesche vocalisme 257, 261–4; Kurylowicz, Prace filologiczne 17.95 f.; Sturtevant, Lang. 14.109 fn. 20a, 15.148 fn. 11.

to each other as corresponding voiceless and voiced sounds, and, since
Hittite preserves the Indo-Hittite distinction of voicing or the lack of
it in the mutes, its similar distinction between the two velar spirants is
probably inherited also.[4]   The evidence for the distinction in Hittite
is that, while ḫ(ḫ) for IH x tends to be written double where the cunei-
form system of writing makes this possible, Hitt. ḫ for IH γ is never
written double.   IH x occurs twice in Hitt. ḫuḫḫas = Lat. avus 'grand-
father'.   The initial consonant cannot be written double, but medially
between vowels this word always has ḫḫ.   Couvreur's examples of the
voiced phoneme are unfortunate, and I must substitute one of my own;
Hitt. weḫzi (pret. 1 sg. ú-e-ḫu-un) 'he turns' and Skt. ótum (RV), ótave
(RV), vátave (AV) 'to weave' imply IH ꭗwéγ- : ꭗáuγ- (base ꭗeweγ-).[5]
Other Hittite words, aside from those mentioned below, in which we
must assume IH γ are seḫur 'urine, urination', meḫur 'point of time,
time',[6] and ḫamesḫan (acc.) 'spring and summer'.[7]

I have previously argued[8] that double writing of a mute in Hittite
indicates original voicelessness (a-ap-pa = Gk. ἀπό; kat-ta = Gk. κατά;
lu-uk-ki-iz-zi 'kindles' : Lat. lūceo), while original voiced mutes and
voiced aspirates are never written double in Hittite.   I nevertheless
felt compelled to follow Weidner[9] in thinking that Hittite had lost the
distinction of voice vs. voicelessness, since the cuneiform mechanism for
making that distinction (familiar in most of our Akkadian documents)
was not so employed.   It now seems clear, however, that the earliest
Akkadian writing made no distinction between voice and voicelessness.
We can observe the gradual specialization of separate signs for p and b,
t and d, k and g before our very eyes.[10]   The Hittite syllabary, and
also the Hurrian, were borrowed from some early form of the Akkadian
syllabary that had not been affected by any such specialization, but
which employed indiscriminately the signs that later or elsewhere were

[4] This line of reasoning was first presented by Couvreur; but his statement of
the case can be improved.

[5] The vocalism of the first syllable, and thereby the initial laryngeal, are
determined by the Greek cognate; see Walde-Pokorny 1.16.

[6] On seḫur and meḫur, see Lang. 12.182–7, 14.109 fn. 20a.

[7] See Lang. 15.153.

[8] JAOS 52.1–12, HG 74–84.

[9] Leipziger Semitistische Studien 7.13–25.

[10] Cf. Ungnad, Materialen zur altakkadischen Sprache = Mitteilungen der
vorderasiatischen Gesellschaft 20.2 (1916); Thureau-Dangin, Le syllabaire acca-
dien pp. IV f. (1927), Tablettes cappadociennes (deuxième série) 4–6 (1928).
I am under obligations to my colleague Goetze for instruction in this matter.

specialized in the values of *t* and *d*, etc.   The Hittite and Hurrian syllabaries, on the other hand, show the development of a different device, namely double writing, to denote voicelessness.   Consequently the evidence now appears to indicate that both Hittite and Hurrian possessed the distinction between voiced and voiceless mutes; double *t* or *d* in Hittite stands for *t* and single *t* or *d* for *d* (correct my HG accordingly).

And the use of the same device to distinguish two velar spirants implies that one of them (often written ḫḫ) was voiceless and the other (always written ḫ) was voiced.[11]   The final proof that ḫ written singly was a voiced sound is furnished by Götze's observation[12] that the single ḫ is occasionally interchanged with an *r* that is also written singly.   Furthermore Speiser[13] has pointed out a similar situation in Hurrian, whose syllabary seems almost identical with the one used by the Hittites.

If Hittite preserved the Indo-Hittite distinction between *t* and *d* in respect to voicing and if Hittite also possessed a distinction in voicing between its two velar (or post-velar) spirants, it is extremely probable that the two velar (or post-velar) spirants of Indo-Hittite were distinguished in the same way.   Confirmatory evidence is not lacking.

2. Kurylowicz[14] has argued from Skt. *pibati* and Lat. *bibit* 'drinks' beside Skt. *pānti* (RV) 'they drink', Lat. *pōtus*, *pōtor*, etc. that **pi-pγ-éti*[15] became **pi-bγ-éti* by assimilation.   For Kurylowicz the reason for positing γ rather than another laryngeal is that the word commonly shows radical *ō* in the full-grade forms of the Indo-European languages. In my opinion[16] *o* and *ō* are always due to ablaut; for me the only evidence for assuming γ rather than some other laryngeal in this word is

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[11] This explains the facts noted in HG 84, that *zz* is more than twice as frequent as *z* between vowels, and that scarcely any words always show *z* in that position; *z* stands for *ts* and is properly written double as a voiceless sound.   Whether the enclitic -*za*, the only common word that always shows a single *z* between vowels was voiced [dz] is not clear; there are other peculiarities also in the writing of this word, and its etymology is unknown.

Similar reasoning suggests that we assume a voiced *s* in such words as *kis-* (*ki-i-ša*, *ki-ša*, *ki-ša-ri*, *ki-ša-a-ri*, *ki-i-ša-ri*, pret. *ki-ša-at*, etc.) 'become' and *was-* (*wa-a-ši*) 'buy'.   Similarly voiceless *l*, *r*, *m*, and *n* are indicated by *ma-al-la-i* 'he grinds', *kat-te-ir-ra-az* 'below', *am-mu-uk* 'me', *an-na-aš* 'mother', etc.   This whole matter demands further investigation.   Cf. below p. 84.

[12] Muršilis Sprachlähmung 28–32.

[13] JAOS 58.200 f.

[14] Études indoeuropéenes 1.54 f.

[15] He writes ʔ₃.

[16] Lang. 14.104–11.

precisely the voicing of *p* to *b*. In fact Hitt. *pa-aš-zi*, *pa-a-ši* 'drinks, swallows', or the like,[17] might seem to imply rather ' or *ʔ*, since either of these would be lost in Hittite. It is probable, however, that IH γ*s* became Hitt. *sγ* (or *zγ*) and that γ was lost between consonants (see below p. 86). I therefore assume that IH *poγsti* became *posγti* (or *pozγdi*) and then Hitt. *paszi* (with *-zi* by analogy).

3. Sapir once suggested in a lecture that Hitt. ᶻᴬ*ḫekur* 'peak, summit, stronghold' might be equated with Gk. ὄκρις 'jagged, point', Lat. *ocris* 'mons confragosus' (Paul. Fest.). The etymology is impossible in this form. The Hittite mute is always written singly and the following *u* suggests a labio-velar; we need an Indo-European etymon with *gᵘ*. One thinks, therefore, of Skt. *giríṣ*, OCS *gorā* 'mountain', Gk. δειρός 'hill', δειράς 'mountain ridge', which can be connected with the Hittite word on the basis of IH γ*égur* : γ*gwér-*.

If we assume that the mute was originally *k* and was voiced in forms in which it came into immediate contact with γ (*g* then spreading from IH γ*gwér-* to γ*égur*, etc.), we may also connect Gk. ὄκρις, etc., as representing IH γ*ek-*, γ*ok-*, provided *-wer-*, *-ur-* of the former words is regarded as a suffix. We may still connect ὄκρις with ἄκρος 'highest', Skt. *aśríṣ* 'edge', ἀκμή 'point', etc., if we assume that the latter have reduced grade of the radical syllable (IH γ*ьk-*), and we may account for the IE palatal *k̂* on the basis of such forms as Lat. *aciēs*. The *ā* of Lat. *ācer* must be a secondary development if this part of our etymology is correct.[18]

While the connection of Hitt. *ḫekur* with Skt. *giríṣ*, etc., may be considered certain, our argument for the voiced character of γ depends upon the more remote and less certain connection with Gk. ὄκρις, etc.

4. Sapir[19] has shown that an initial group consisting of a voiceless laryngeal (', *ʔ*, or *x*) plus *w* yields Attic Greek rough breathing. For such words I propose to write Indo-European *hw-*, leaving undecided the question whether this constituted one or two phonemes. Thus Gk. ἑσπέρα and Lat. *vesper* come from IE *hwesper-* and this from IH *ʔwesper-*.[20]

It follows that we must assume a voiced laryngeal in case an initial laryngeal before *w* is required and Attic Greek shows smooth breathing.

[17] Sturtevant, Lang. 14.77.

[18] Cf. Ernout-Meillet s. v. *ācer*.

[19] Lang. 14.269–71. There is a fuller treatment in an unpublished Princeton dissertation by W. M. Austin.

[20] IH *ʔ* is required if we connect Skt. *ava* 'down', Lat. *au-* 'away' and Hitt. *awan*. Otherwise we may as well assume ' or *x*.

A clear instance is ἤδη 'I knew' from *ἠ-ϝειδεα from IE ē-weidəsm̥. An initial laryngeal must be assumed to account for the long augment, and ample confirmation of the inference comes from Homeric νῆις, νηιδος 'unknowing' from IE n̥-wid-, whose long syllabic nasal evidences a lost laryngeal. This laryngeal must be either ' or γ, since either of the others would have changed the augment to IE ā-, and ' is ruled out by the smooth breathing not only in our word but also in οἶδα, εἶδον, etc.

Confirmatory evidence that this root contained the fourth laryngeal seems to be presented by Hittite ḫuwitar (ḫu-u-i-tar), ḫwitar (ḫu-i-ta-ar, gen. ḫu-it-na-aš) 'the animals'. I formerly suggested[21] that this word might be connected with Skt. vāti, Gk. ἄησι 'blows', assuming the suffix -ttar, which forms verbal nouns. While it is possible to read the Hittite word as ḫwettar, as this etymology requires,[22] there is no evidence in nine occurrences either for the vowel e or for the consonant tt. A more serious objection is that the oblique stem ends in -tn- instead of in -nn- as is regular in the nouns with suffix -ttar. I formerly attempted to explain this peculiarity by the brevity of the word; but it is much more likely that -tn- became -nn- while -dn- remained unchanged. I am, therefore, now inclined to connect ḫuwitar with IE weid- 'see, know' on the basis of IH γuwid-ór, gen. γuwid-nós 'sight, consciousness' or the like, whence 'conscious beings, animals'. This etymology is not open to the objection sometimes urged against the connection of Skt. manuṣ, Germ. Mann 'man' with the root men- 'think'; primitive man would more naturally call all animals 'thinkers' than reserve this designation for himself alone.

It must be remembered, however, that the fourth laryngeal is required by the Greek evidence whatever one thinks of Hitt. ḫuwitar.

5. Another instance of long augment before ϝ in a verb that shows smooth breathing in Attic is ἐάγην < *ἠϝάγην, aorist passive of ἄγνυμι 'break'.[23]

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[21] HG 150.

[22] Cf. Sturtevant, AJP 59.96.

[23] ἄγνυμι has often been connected with ῥήγνυμι on the basis of an Indo-European alternation of wr- with w- (cf. Lat. frango : Skt. bhanákti 'break'). This unconvincing etymology is now further weakened by the short augment in ἐρράγην. I am inclined to suggest a connection with Hitt. ḫwek-, ḫuk- (ḫu-e-ik-zi, ḫu-ik-zi, pl. ḫu-u-kán-zi, ḫu-kán-zi, pret. 1 pl. ḫu-u-ga-u-en) 'set free from witchcraft'. That this rather than 'bewitch, charm' is the primary meaning of the verb is indicated by its constant use of magic favorable to the person upon or for whom the rite is performed, and still more strikingly by its occasional opposition to ḫamenk- 'bind' in the same text (see instances in Friedrich, ZA NF

6. The identity of Hitt. *esḫar* (*e-eš-ḫar*) and Gk. *ἔαρ* 'blood' has long been recognized, and Benveniste[24] has recently argued that Hittite confirms W. Schulze's[25] belief that the Greek word was originally *ἦαρ* (so Hesychius), of which epic *ἔαρ* is a graphic corruption.   Benveniste is wrong in inferring a long initial vowel from the Hittite orthography (*e-eš-*), as is evident from *e-eš-zi* 'he is' and a great many other similar spellings.   We must, however, assume IH *'eγsr* to account for the Greek long vowel.   The Hittite word shows the same metathesis of IH *-γs-* that we observed above (p. 84) in *paszi* < *pasγti* < IH *paγs-ti*; and that I suggested[26] in Hitt. *ḫamesḫa-* 'spring and summer' from IH *xʋmeγso-* : OE *māwan*, Gk. *ἀμάω* 'mow, reap'.   In *esnas* (*e-eš-na-aš*), the genitive of Hitt. *esḫar*, we have loss of IH *γ* between consonants as in *paszi* 'drinks'.   The IH genitive must have been *'ʋγsnés*, and the Hittite initial vowel is analogical.   Several of the Indo-European languages, on the other hand, generalized the reduced grade vowel (IE *ə* from IH *'ʋγ*); whence Lat. *aser* (*s* by dissimilation against the following *r*, as in *miser*), Lett. *asins* 'blood'.   Gk. *ἔαρ* may also have *ε* from *ə*, or it may be secondarily shortened from *η*, as Wilhelm Schulze thought. Skt. *ásṛk* is difficult unless we assume that secondarily accented *ə* yields Skt. *á*[27] or (more plausibly) hold that initial *ə* regularly gives Skt. *a*.[28]

Of particular interest to us at present is the Greek smooth breathing. While it has been possible hitherto to explain this as dialectic, it is in any case to be expected; for the lost sibilant must have been voiced from Indo-European times, since it resulted from IH *γs-*.

7. The smooth breathing of Gk. *ἰάομαι* 'cure' and *ἰατρός* 'physician' calls for IE intervocalic *-z-* in the same way, and the initial long vowel suggests a laryngeal.   IH *iγsaː-* would yield IE *īzā-*.   If Skt. *íṣate*

4.187 fn. 3).   The most important objection to the new etymology is that the durative is regularly written with *-kk-* (e.g. *ḫu-ʋk-ki-iš-ki-iz-zi*).   To be sure there are other cases of double mute in the durative beside single mute in the primary verb; but at least in the case of *ak-ku-uš-ki-iz-zi* : *e-ku-zi* 'drinks' the double writing is the one that is phonologically regular.   At any rate my former connection (HG 96) of Hitt. *ḫwek-* with IE *wekʋ-* must be given up on account of (1) the meaning of the Hittite verb, (2) the lack of *u* after *k* in Hittite, and (3) the short augment in Sanskrit and Greek.

[24] Origines de la formation des noms en indo-européen 1.8, 26.
[25] Quaestiones Epicae 165.
[26] Lang. 15.153 fn. 29.
[27] F. Bechtel, Hauptprobleme 252; Wackernagel, Altindische Grammatik 1.5.
[28] Cf. H. Pedersen, KZ 36.76 f.

'moves' is to be connected it represents IH *iγsé/ó-*, becoming IE *īzé/ó-*. I see no way of connecting Skt. *iṣ-* 'send' with *īṣ-* 'move' on this basis. The short *ι* of later Att. *ἰάομαι* and *ἰατρός* seems to be secondary.

The Indo-European evidence by itself would scarcely prove that IH γ was a voiced sound; but the Hittite evidence establishes a strong presumption that IH *x* and γ were corresponding voiceless and voiced sounds, and the various traces of a voiced laryngeal that we have adduced from Indo-European languages support the presumption so fully that we may fairly consider the thesis proved.

SEMANTIC NOTES TO LATIN ETYMOLOGIES

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[See the first paragraph.]

For a full century the Latin language has been subjected to the most searching scrutiny by comparative methods, semantic data being employed as a sort of control. While these studies may be judged to have reached their limits, a residue of words remains for which no satisfactory etymology has been found, or none at all, as may be discovered by consulting the very conservative dictionary of Ernout and Meillet.[1] Upon these more obscure words, the writer believes, some light may be thrown by following semantic clues, and the following notes are offered in the hope of demonstrating this to be true. Documentation is not presented for usages that may be verified in any lexicon.

aperiō, operiō: Evidence from Oscan-Umbrian and the Balto-Slavic group is quoted in support of the division **ap-veriō, *op-veriō,* the verb meaning 'shut', as of a door or gate. This harmonizes none too well with the frequent association of these verbs with clothing: *capite opertō, pectore apertō.* Contamination, therefore, of the above verb with **veriō* 'clothe', of the *vestis* group, may be suggested. In sculpture the goddess Vesta, like Hestia, is regularly veiled, which suggests 'veiled mother' as the explanation of *Vesta māter,* perhaps a symbolical reference to the banked fire. If correct, this is evidence for a verb like **veriō* from **vesiō.*

auscultō: This verb, like *audiō, oboediō,* belongs in the dialect of master and servant. The second element may well be the intensive-frequentative of *colō* in the meaning 'keep in motion, keep busy', like *aurēs ērigite.* Cf. πόλος 'part that revolves, revolution', and ἀμφίπολος 'one that busies himself about the master', *anculus. Colōnus* is radically one who 'circles' the field, going 'round and round' as a plowman, δινεύω being so used. The meaning 'dwell, inhabit' is secondary, *agricola* being an older compound than *caelicola.*

castīgō, fatīgō, lītigō, iūrgō: In the Roman pattern of thought, 'law'

[1] Dictionnaire étymologique de la langue latine, Paris 1932.

was closely identified with the 'law-court'; it was a 'place': hence *in iūs īre, in iūs vocāre*. *Lēge agere* 'conduct an action at law' contains a locative. This is manifest in *lītigō* and *iūrigō*, where the middle vowel has not been altered by accent, but is an original locative ending; these may in classical Latin be resolved into *iūre, līte agō*, the compounds having accumulated diverse connotations. In *fatīgō* we may recognize the locative of the *i*-stem **fatis*, from which came *fatīscō* 'open up, shell out'. Leguminous crops were not threshed by tramping, but by beating with a flail; hence *fatī agere* would mean 'be busy at shelling, threshing, thresh, beat', and secondarily 'exhaust, tire out', *dēfessus* exhibiting the same semantic changes. *Castīgō* will mean 'be busy at sifting': *mola casta*, 'sifted, bolted flour'. For **castis* 'cutting, separating, sifting', cf. *crībrum* 'separator, sieve', from *cernō* 'divide'. Religious associations of 'sifting', combined with the whiteness of bolted flour, produced the secondary meaning *castus* 'pure, chaste'. Quite different from the above is *pūrgō, pūrigō*, from **pūro-agō*, an older type of causative than *pūrificō*, where the middle vowel has been changed by accent. It may be added that *affatim, ad fatim* means 'till shelling is complete', i. e., 'to satisfaction'. The Latin language was made on the farm and transferred to the forum.

cervus, cervīx, cerebrum: Cervīx, formed like *fēlīx* and *pernīx*, is used in the plural of human beings, because they have two shoulders as 'rests' for the yoke while animals seem to have but one. This points to the root *kri*, as in Skt *çrayate* 'lie, rest', which would give to *cervus* 'forked stick, rest for vines' a semantic priority over the meaning 'stag', so called from the resemblance of its antlers to forked sticks. Thus *cervus* would be a sort of doublet for *clīvus* 'leaning, sloping'. Similarly, *cernuus* means *inclīnātus*. The accepted association with κέρας 'horn' presents difficulties on account of the dissyllabic form, and it ignores the difference between horn and bone. Instead of **keras-rom*, therefore, for *cerebrum* I suggest **kere-dhrom*, the part of the head that 'rests' on the head-rest, which is older than pillows. As this term was shunted to denote 'brain', the diminutive *cerebellum* was coined to carry the original meaning 'back of the head'. From the same font will fall *vertebrum*, 'the part that turns'. Since only the *vertebrae* of the neck manifestly turn, this word must first have denoted these parts. The spine, however, is an obvious collection of similar parts, whence the collective *vertebrā*, repluralized when we say *vertebrae*. So it would seem the semantic starting point for both *vertebrum* and *cerebrum* is the back of the head and neck. The assumption of a root *cer-* 'incline, lean'

in Latin, of course, depends for its plausibility upon the extensive co-existence of roots in *l* and *r* in IE and in individual languages. *Cernuus* 'inclining' is the best authenticated Latin example.

crīnis: Connection with *crībrum* and *cernō* seems certain. Since extremely remote times sieves have been made from hair and are still being made. Hence the restriction of *crīnēs* to the long hair of women and horses; there is a semantic shift from the operation to the instrument. Connection with *crista* is not demonstrable.

digitus, dignus, indignus: A by-form *dicitus* is cited, and it persisted in Romance.[2] This would be an adverb like *dīvīnitus, penitus*, etc., from **dex* as in *index*, meaning 'with a gesture', naturally made with the forefinger. I suggest that by a semantic shift from the action to the instrument this became misconstrued as a noun, with *g* for *c* as in *vīgintī*. In the case of *dignus*, the accepted reference to *decet* fails to account for the construction with the ablative. This requirement would be better fulfilled by reference to *dīcō* 'point at': *praemiō dignus* would mean 'singled out or honored with a prize'. The Servian commentary quotes, without context, *indignae turrēs* 'tall towers';[3] this would belong with *index* and *indicō*, 'worthy to be pointed out'. If genuine, this use exemplifies the ambiguous *in-*, as in *īnfectus* 'not done' or 'dipped, dyed'. In this instance the negative force alone survived, but even one example supports the derivation of *dignus* from **dic-nos*. Whether the meaning is pejorative or meliorative does not seem to affect the choice between *decet* or *dīcō*; the case function is the same in *poenā dignus* as in *praemiō dignus*. Neither can be explained by reference to *decet*.

discipulus: In spite of the meaning this word cannot be formally referred to *discō* nor related semantically with **discipiō*. The word *studēns* 'enthusiast, student' suggests reference to *discupiō* 'be very eager'. **Discupulus* is not citable, but evidence of Romance points to *manupulus* as well as *manipulus*.[4] It is not necessary, therefore, to invoke the influence of accent to explain the vowel change; cf. also *clupeus clipeus, inclutus inclitus, lumpa limpa, lunter linter*. For the semantic history cf. French-English 'amateur'.

idōneus: This is an old puzzle. Varro employs it in the meaning 'edible': (*oleas orcites*) *manere idoneas solere*.[5] This suggests derivation

[2] Meyer-Lübke, REW³ 2638.

[3] Ad Eclog. 10.10.

[4] Meyer-Lübke 5306.

[5] De Re Rustica 1.60. For the vowel, *igitur* from *quid agitur* is not too certain. Sommer, Lateinische Laut- u. Formenlehre 77.5 (Heidelberg 1914), cites *pināria, pidātū, sinātus* (bis), *fistūca*.

from *edō*, cited as 'glutton', though the pejoration need not be stressed. No precise parallel seems available for the vowel change, but the semantic shift from 'edible' to 'fit' remains attractive. For the form, cf. *errōneus* from *errō*, *-ōnis*.

indūtiae: Varro was correct in defining this: *Indutiae sunt pax castrensis paucorum dierum.*[8] Soldiers continually under arms, especially in hot weather, must have suffered extremely from the weight and rigidity of helmets, breastplates, and greaves. The resumption of civilian garb, *indūtiae* from *induo*, must have been necessary for their relief. Similar plurals associated with dressing are *impolītiae*, *induviae*, *munditiae*. These are omnibus plurals that denote single actions consisting of numerous details.

licet: The explanation of this word lies in a gesture. Skt. *likh* 'scratch, furrow', NE *a lick of the whip, take a licking; polliceor* 'raise the thumb, *pollex*' (in bidding at auction), *pollex* being formed like *index* from the gesture. The root means 'chop, hack, pound', by repeated blows; *sublica* 'pile', as in *pōns sublicius; līctor* 'scourger'; *colliciae, ēlicēs* 'furrows for drainage', made by blows of the spade, falsely referred to *liquor*. For the kind of action cf. *pāla* 'spade', for **pagsla* from *pangō*. The praetor concluded sessions of courts by a signal to the crier, as is done in the Supreme Court today. No doubt he raised his hand. The crier's formula is given by Servius as *īlicet*,[6] but this is best explained as originally addressed to the defendant, 'Go, he gives the signal.' *Prōmittō* 'promise' has a similar semantic history: *mittō* 'strike, make a gesture': *promisit pariter Caesar utraque manu.*[7] *Īlicet* shares the secondary meaning 'at once' with *extemplō*. Religious assemblies, like courts, were no doubt dismissed by a gesture from the presiding official, probably to a crier, and this gesture may have been prophylactic, as in the case of the modern priest pronouncing the benediction, but it is incidentally significant of dismissal. If the people, as in the lustration, had been standing for hours in a hot sun, they would lose no time in leaving the precinct, *extemplō* 'at once'.

locus, līs, lītus: Stlocus can hardly be separated from στέλλω 'put, place, establish', seemingly an *o*-grade with an uncommon metathesis, **stlo-kos* instead of **stol-kos*. Because of the rare consonantal framework it is tempting to refer *stlīs* to the same root, explaining it like θέμις and θεσμός 'fixture, enactment', from τίθημι 'put, establish'. Cf.

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[6] Aeneid 2.424.

[7] Martial, Liber Spect. 20.2.

[8] Aulus Gellius 1.25.2.

pāx and *pāctum* from *pangō* 'fix, establish'. *Līs* is construed precisely like *lēx* and *iūs: lēge, iūre, līte agere*. Cf. *lītigō, iūrigō*. Because of the association of στέλλω with ships it is attractive to explain *lītus* as **stlītus* 'mooring place, beach'. *Līs* and *lītus* would presume a form *stleit-*, for which other evidence may be lacking.

opīnor: The deponent form, the meaning, and the use of *inopīnātō* and *necopīnātō*, like *auspicātō* and *litātō*, hint at religious associations. The first step in certain sacrifices was to pour wine over the head of the victim, the purpose of which, according to Servius, was exploratory.[9] Therefore I suggest *op-vīnor* 'pour wine over', with *p* from *pv* as in *ap-*, *op-veriō*, whence *aperiō* 'open' and *operiō* 'cover'. The semantic development will be the same as in *auguror*, from 'take auguries' to 'conjecture'.

paenitet: I suggest that this word exhibits a contamination of form and function. We would expect **paenitat*, denoting the habit of saying *paene*, as the fisherman says 'I almost had that one,' but the feeling is regret or disappointment, which threw the verb into the *pudet* group, denoting emotion. A few verbs seem to echo greetings or cries: *salūtāre* means to say *salvē* or *salūtem dīcō*; *quirītō(r)* was rightly or wrongly associated with *cīvis Rōmānus sum* and *quirītēs*; *ovāre* is an echo of εὐοῖ and *triumphāre* of *iō triumphe*; εὐάζω means to cry εὖα.

sepeliō: All proposed etymologies assume this verb to have reference to the disposal of the corpse, but the primitive objective of funeral rites is the banishment of the soul.[10] Hence we may take it at its face value, *se-peliō*, with *se-* as in *solvō* for **se-luō*, not *sē-*, which is in later compounds like *sēparō*. The doublets **peldō* and **peliō* are paralleled by *pulsō* and *pultō*. Cf. *tendō* and *teneō*.

sīdus, cōnsīderō, dēsīderō: The rustic calendar of the ancients was fixed chiefly by the heliacal settings of the stars. Thus, when Virgil advises, *serva sidera,*[11] this means 'watch the settings,' although we render it 'watch the stars.' The word is manifestly from *sīdō*, and has shifted from 'setting' to 'star' by a common type of ellipsis, like 'roast' for 'roast of beef'. *Cōnsīderō* then means 'sit down together, deliberate', and *dēsīderō*, 'sit a long time, mourn for the dead'; early Roman custom seems to have set the limit at eight days.[12] On sepulchral monuments the mourners are regularly seated.

[9] Ad Aen. 6.244.

[10] Aen. 3.67–8: *animamque sepulchro / condimus*; Ovid, Fasti 5.451; Pliny, Epist. 7.27.

[11] Georgics 1.335.

[12] Plutarch, Sertorius 22.

sōlus, cōnsōlor, sōlor: *Sōlus* is quite possibly for **sōdus,* 'sitter', with *l* for *d* as in *solium* and *oleō* (*odor*); secondary *l* in *sella,* for **sed-la,* and in *bisellium,* may have promoted this change, which is not extremely ancient. Mourners seem sometimes to have insisted on being 'alone', as recorded of Camillus and Sertorius.[13] *Cōnsōlor* would mean 'sit with the mourners, console'. If this is correct, then *sōlor* comes by decomposition, like *fessus.* In this case, the idea of 'mourning' functions as a semantic link between 'sitting' and 'solitude'.

sincērus: This is probably technical from the lumber trade. *Prōcērus* is properly applied to trees, 'straight grown, tall', with *prō-* denoting extension in one direction, as in *prōlongō,* and *prōdūcō.* *Sincērus* is 'single, clean grown', with *sin-* as in *sincinium,* etc., i.e., 'free from knots, pure'. This quality was not without religious significance; the *lituus* of the augur was defined as 'baculum sine nodo'.[14] The second element is well known, cf. *crēscō, Cērus Mānus* 'creator bonus'.

sinciput: This is probably technical from the meat trade. Meat from hogs' heads is usually minced for sausages. By contrast, when heads are cooked whole, the term would naturally be 'whole head', with *sin-* as in *sincinium,* etc. Thus the distinction is not between a whole head and half a head, as in ἡμικεφάλαιον, but between whole meat and minced meat. It is impossible to make *sin-* out of *sēmi-.*

sublīmis: *Līmus* means a straight, seamless web of cloth worn as a girdle by attendants in certain religious and legal ceremonies.[15] Celestial beings are frequently represented in works of art with a *līmus* held in the two hands and arched over the head; they are literally *sub līmō* and the older form of the adjective is *sublīmus.* I suggest that this is a metaphor translated into art, like the winged feet of Mercury, where the adjective 'winged' enshrines a metaphor from the feathered arrow and means 'swift'.[16] The 'belt' or 'zone' in question can be no other than the zodiacal belt, which seems to encircle the celestial sphere, denoted sometimes by *cingulum.* There is no direct semantic link with *līmen,* though the etymon is probably the same.

tenebrae: One meaning of this is 'dungeon, place of detention', and the natural reference is to *teneō,* i.e. **tene-dhrom,* like *vertebrum* from **verte-dhrom.* Equation with Skt. *tamisra* presents phonetic difficulties, and is needless. In such words the neuter plural **tenebrā* becomes a collective singular and is subsequently repluralized; of these I have a list

[13] Plutarch, Sertorius 22, Camillus 11.
[14] Livy 1.18.
[15] Servius ad Aen. 12.120; Aulus Gellius 12.3.3.
[16] Cf. J. A. K. Thomson, CQ 30.1–3 (1936).

of some 45 specimens, like *dīvitiae, mināciae, vindiciae,* etc.   The secondary meaning 'darkness' in this case prevailed.   The subterranean Tullianum in Rome will exemplify both meanings, 'dungeon' and 'darkness'.

Venus: There is no need to go to Sanskrit to explain this.   The change of gender points to semantic change.   Naevius used *Venus* for *holera:*[17]   Venus was goddess of gardens.   *Veniō* sometimes means 'grow';[18] *prōveniō* functions like a passive of *prōgignō; prōventus* means 'crop, harvest'.   That the change from 'fruit' to 'goddess of gardens, charm, grace' is fairly recent is proven by *venustus,* which, if ancient, would have been **venestus,* like *funestus.*   Identification of Venus with Aphrodite may have quickened the semantic shift, though it need not have caused it.   *Veneror,* religious deponent, may be taken at its face value, 'carry first fruits to the god', as in Georgics 1. 338-9: *in primis venerare deos atque annua magnae / sacra refer Cereri.*   The semantic shift is from the action to the accompanying emotion and the verbal expression of it in prayer.   Cf. *contemplor,* which first means to divide the heavens into *templa* and is then transferred to the ensuing mental state of the watcher for omens.

[17] Festus 51 Lindsay (Teubner, 1934), 58 Müller.
[18] Georgics 1.54; 2.11, 58; Propertius 1.2, 10.

EVIDENCE OF A MEDITERRANEAN SUBSTRATUM IN CELTIC

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[Certain syntactical similarities between Celtic and Ancient Egyptian—specifically, phrases of anticipatory emphasis, suffixed pronouns, and adverbial predicates—are interpreted as evidence of a general Mediterranean substratum in Celtic.]

During the last decade the theory of the substratum influence on Indo-European languages has made considerable progress. The scepticism expressed by Henri Gaidoz in the following quotation has been completely abandoned by some of the best scholars: 'Je ne parle pas des pré-Celtes, . . . car de ceux-là l'histoire et la linguistique ne savent rien et ne peuvent rien savoir. Si l'on veut à toute force donner un nom à cet ancêtre anonyme, je serais tenté de l'appeler du nom de celui qui crut l'identifier: *Homo Pokornius*.'[1]

As early as 1925, Meillet had expressed his approval of the substratum theory as follows: 'On est amené ainsi à supposer que les innovations les plus caractéristiques du français tiendraient non seulement à la façon dont le latin a été prononcé en Gaule, mais à une hérédité d'habitudes acquises par les sujets parlant gaulois. Avec cette forme de l'hypothèse, les objections que l'on fait souvent à la théorie du *substrat* se résolvent immédiatement.'[2]

Today much of the work on the substratum problem is being done in topography by attempting to trace geographical names back to their pre-Indo-European origins. In 1931, Meillet accepted for publication in the Bulletin de la Société de Linguistique de Paris the now classic article Problèmes de Substrat by Vittorio Bertoldi.[3] Two other scholars who have done considerable work on the same problem are Pierre Fouchet and Albert Dauzat.[4] We can say, therefore, that the substratum

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[1] Revue Internationale de l'Enseignement 111 ff. (1917).

[2] Antoine Meillet, La méthode comparative en linguistique historique 1.80–1 (Oslo 1925), and Caractères généraux des langues germaniques 4.232 (Paris 1930).

[3] BSL 93–184 (1931).

[4] Albert Dauzat, La question des bases pré-indo-européennes en toponomie; Le Français Moderne 6.193–200.

theory is now receiving much attention and will continue to be one of the biggest problems in linguistic science.

Although it is not the subject of this paper, we might mention here the fact that considerable work is being done on the similarities between the folklore, popular legends, customs, and manners of the Celts and those of the Egyptians and other Mediterranean peoples. In this connection, we can cite Geoffrey Keating's History of Ireland (1634), in which he tells us of the legendary, and perhaps historical, migrations into Ireland by certain Mediterranean peoples.[5]

The scholar who has done the most to show possible relationships of Celtic and Egyptian is Julius Pokorny. In his article Das nicht-indogermanische Substrat im Irischen,[6] he points out the relationship of Old, Middle, and Modern Irish to the Semitic and Hamitic language groups. He says, for example, in speaking of suffixed pronouns: 'Im Koptischen (und Altägyptischen) findet sich dieselbe Konstruktion. . . . Besonders auffällig ist der gleiche Ausdruck für den ausserhalb der Verbalform stehenden Dativ, sowohl hier, wie im Altirischen.'[7]

We cannot expect to trace substratum idioms in their entirety down to Modern Irish. The linguistic development has followed a long path from the Mediterranean languages to Old Irish, covering a period of approximately two thousand years, and we are not as optimistic in this case as Dauzat seems to be when he hints that he would answer the following question in the affirmative: 'Pourrons-nous espérer atteindre un jour la phonologie des néolithiques . . . ?'[8] We can only point out certain syntactical patterns which occur in both Celtic and Egyptian. It is obvious even to the beginner in Old Irish and Egyptian that there are certain peculiarities which are common to both these languages. Pokorny, in his article on the substratum in Irish, mentions some of these. We wish to point out some others which he has not covered in this article, or which he has not covered fully.

Both Old Irish and Egyptian use an introductory phrase to express anticipatory emphasis. Cf. OIr. *Is Dia rofitir . . .*,[9] 'It is God who knows. . . .' This Celtic construction has come down into French as *c'est que.* Egyptian made use of an adverbial phrase *'r* 'as to' or 'con-

[5] Geoffrey Keating, History of Ireland 1.138 ff. (Irish Texts Society).

[6] Zeitschrift für Celtische Philologie 16–8 (1926–30).

[7] ZCP 17.385.

[8] Fr. Mod. 6.200.

[9] Wurzburg Glosses 23a27. The Celtic examples cited could be taken from any of the Celtic tongues. We give those that come most easily to hand.

cerning' to express the same idea:[10] thus perhaps 'As for God, he knows. . . .'   Other examples of this construction are: *'r sf, Wsir pw* 'As for yesterday, it is Osiris', and *'r ṭaty, mk nn brn' 's pw* 'As to the (office of) vizier, behold it is not pleasant.'

There is another expression in Egyptian, however, which is even more similar to the Celtic and, incidentally, to the French *c'est* and *ce sont*, as Gardiner himself points out.[11]   This is the use of the demonstrative pronoun *pw* as the logical subject, in much the same way as the French *ce*.   For instance, *ḥwrw pw* 'they are wretches' and *R' pw* 'it is Rē'' or 'he is Rē''.   The predicate may be an independent pronoun, in which case it is very close to the French *c'est lui, c'est moi,* etc.   For example, *'nk 's ḥḳa Pwnt* 'it is I (who am) the ruler of Punt' and *ntf pw m ma't* 'it is he in truth'.   This same form, combined with the third person singular of the verb, is used whenever the predicate is a virtual noun clause:[12] for example, *'r rwt nt ḥaty rww·f sw pw ḥr mnd·f 'aby,* literally 'as to movement of the heart, it is that it moves itself in his left breast', etc.   *Pw* is also combined with the independent pronoun *'nk* 'I' and here follows exactly the same syntactical pattern as the French *c'est moi qui*:[13] for instance, *'nk pw sḫa·n·' mwt mwt·'* 'I have been thinking about (lit. it is I have recollected) the mother of my mother.'   Throughout this paragraph, we have drawn a parallel between French and Egyptian only because the French forms cited are generally recognized as being of Celtic origin.[13a]

Another interesting construction, which Pokorny treated fully,[14] but which we repeat here for the sake of completeness, is that of the suffixed pronouns.   In Old Irish, 'with me' is expressed by *lemm,* 'with him' by *le(i)ss,* 'with us' by *linn.*   In Egyptian, *n·'* means 'to me', *ḥn'·s* 'together with her', etc.   Not only are these personal suffixes used with prepositions in Egyptian, but they are also added to nouns to express the genitive and to simple tenses of the verbs to express the nominative.[15]

One of the most striking peculiarities of Celtic and Egyptian is that

[10] Alan H. Gardiner, Egyptian Grammar §149 (Oxford 1927).   See also Adolf Erman, Aegyptische Grammatik §§296, 493, and Jean Lesquier, Grammaire Egyptienne §187 (Cairo 1914).

[11] Gardiner §128, Lesquier §38c.

[12] Gardiner §189, Lesquier §177.

[13] Gardiner §190.

[13a] Ferdinand Brunot, Histoire de la langue française 1.489-90.

[14] ZCP 17.385.

[15] Gardiner §35, Erman §138, Lesquier §53 f.

they both possess adverbial predicates used in place of the nominal predicate. This is a rather unusual syntactical pattern. To illustrate, in modern Scots Gaelic the idea 'James is a carpenter' is expressed *Tha Seumas 'na shaor*, literally 'James is in his carpenter.' Similarly *Bha Mairi 'na searbhant*, literally 'Mary was in her servant', and *Tha e 'na dhuine math* 'He is in his good man' (i.e. 'He is a good man').[16] Egyptian cannot use a simple nominal predicate, but must use an adverbial expression with the so-called *m* of equivalence.[17] It cannot say 'Thou art a scribe', but must say 'Thou art as a scribe': *'wꞏk m sš*. Other examples are *'w sš pn m saꞏ* 'This scribe is as my son' and *Rꞌ mꞌtꞏtn* 'Rē̆ꞌ is as your father'.

Another adverbial predicate in Egyptian, formed with the preposition *r*, is used to express the idea of futurity.[18] Thus *'wꞏf r smr* literally 'He is towards a companion', that is, 'He shall be a companion'; *Mt sw r wnmw* 'Behold, it is for food', that is, 'It will be food'. A similar syntactical expression is found in Celtic, where an adverbial predicate is used in somewhat the same fashion. Modern Scots Gaelic says *Nach 'eil Ceilp rꞌ a deanamh?*, literally 'Isn't Ceilp at its doing?',[19] which can have futurity of meaning.

There are probably some who believe that any syntactical similarities in Celtic and Egyptian can be explained as coincidence, or that a few minute peculiarities do not constitute a tenable case. However, it would obviously be quite impossible to find more than a very few resemblances in two languages so widely separated in time and distance. Furthermore, the substratum theory is constantly gaining ground and, although there is yet considerable work to be done on this problem, we feel that it cannot be dismissed without thorough consideration.

[16] Duncan Reid, Elementary Course of Gaelic 152-3 (Glasgow 1913).
[17] Gardiner §38, Erman §§472, 474.
[18] Gardiner §122, Erman §377.
[19] Norman MacLeod, Caraid nan Gaidheal 28 (Edinburgh 1899).

THE LONG FORMS OF ōn-VERBS IN OLD SAXON

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[The long forms (*ahtoie, haloian, uuacoiande*, etc.) of verbs of the
second weak conjugation in Old Saxon are not of IE origin as is gen-
erally supposed, but owe their existence to an attempt to make a sharper
formal distinction between indicative and subjunctive by adding the
subjunctive endings of the first or *jan*-class to the stem of the second
class. The extension of the long forms to the infinitive and present
participle was due in part to the metrical advantages of these forms in
certain types of alliterative verse.]

In practically all works dealing with problems of Germanic linguistics
we have the statement that the so-called long forms of weak verbs of the
second conjugation (*geboian, ahtoian*, etc.) are old and correspond to
Indo-European denominative (thematic) verbs like Skt. *pṛtanāyáti*
'he fights' from *pṛtanā* 'a fight', Gk. τιμάω < *τιμάjω from τιμή,
OCS *vonjają* 'I smell' from *vonja* 'a smell, odor'. It is further assumed
by some that these thematic verbs influenced the athematic or primary
verbs, as for instance OE *borie* 'I bore' as compared with OHG *borōm*
= L. *forāre* (cf. Wissmann, Nomina Postverbalia 199, note 5). The
result of these views is a reconstructed present paradigm for Primitive
Germanic: *salbōjo, salbōs* < *salbōjis, salbōþ* < *salbōjiþ, salbōjam,
salbōþ* < *salbōjiþ, salbōjand*, with the dissyllabic endings occurring
where the theme vowel was *-o-*, the monosyllabic, where the theme vowel
was *-e-* (cf. Wissmann 199). A concession is, to be sure, made by some
to the extent that the second and third person singular and the second
person plural may be original athematic forms and as such present a
problem similar to the Latin first conjugation verbs (cf. Stolz-Schmalz,
Lat. Gramm. §230). In the Germanic dialects only the so-called Ing-
waeonic Old English, Old Frisian and Old Saxon are said to have pre-
served the older long forms, with a few remains in the subjunctive of the
Old High German, particularly in the Alemannic dialect.

It is my firm conviction, which is also shared by Collitz in his
Schwaches Präteritum 95,[1] that this interpretation of the long forms as

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[1] Brugmann also grants the possibility of Collitz' contention; cf. Vgl. Gramm.
2.3.199 note: 'Collitz . . . hält das as. ags. *-ōjan für eine Neuerung für -ōn. Im

being of Indo-European origin is incorrect; at any rate we are scarcely permitted to postulate such an origin for the Old Saxon and Old High German. One must bear in mind that there is no trace of such long forms in Gothic, Old Norse, or elsewhere in Old High German than in the above-mentioned present subjunctive.

Let us examine the cases in Old Saxon. In the first place it is important to note that the long forms are found only in the verse epics of the Heliand and the Genesis, no trace of them being found in the other Old Saxon documents (*aeschiad*, third person plural indicative, in the Merseburg Glosses has been shown to be Anglo-Frisian; *oppraiu* 'sacrificabo' in the Lublin Psalms is a loan word from the Latin *operāri*, Vulgar Latin *oprāre*, and therefore a later analogical formation after verbs of the first weak conjugation). Secondly, there are, all told, but 42 occurrences (of 20 verbs),[2] of which 33 are infinitives, two present participles, one gerund, three 3d sg. present subjunctive, one 1st pl. present subjunctive, one 2d pl. present subjunctive, and one 3d pl. present indicative. In other words, 36 of the 42 cases are infinitives and present participles; of the six remaining, five are subjunctives and only one is an indicative (*folgoiad*), and that of a probably original third class weak verb. Another important fact is that of the 42 occurrences, 28 are of verbs that belong to the *-ēn* or third class in Old High German: *dagēn* (Goth. *þahan* III), *dolēn* (Goth. *þulan* III, ON *þola* III, Tatian *tholēn*, Otfrid *tholēn* 2x, *tholōn* 1x), *folgēn*,[3] *frāgēn*, *trūēn* (Goth. *trauan* III), *wahhēn*[4] (ON *vaka* III), *wonēn* (Goth. *-wunan* III, ON *-una* III), *zilēn* (Goth. *-tilōn*, Franconian *zilōn*[5]), of which a few have clearly an IE *-ē* base (cf. *dagēn* = L. *tacēre*; *trūēn* = Old Prussian *druwī-t* 'believe' < *druwēti*). Whether we are to assume both an *-ē* and an *-ā* base for OHG *dolēn* < *tʋlē-* (cf. Lithuanian *tilḗti* 'to become quiet') and Old Saxon *tholon*, Old English *þolian*, Old Frisian *tholia* < *telā-*, *tlā-* (cf. Doric ἔ-τλᾱ-ν 'I bore, suffered', Latin *lātus* < *tlā-to-s*) to have existed side by side in Primitive Germanic or whether the second

Prinzip erscheint das nicht unglaubhaft, zumal wenn man die Neubildung umbr. *portaia* "portet" vergleicht.'

[2] The verbs are the following: *ahton* (1), *folgon* (1), *frāgon* (1), *gebon* (1), *halon* (1), *ladon* (1), *lōkon* (1), *samnon* (1), *scadon* (1), *scauwon* (1), *sidon* (1), *thagon* (1), *thionon* (2), *tholon* (19), *tilon* (1), *gitrūon* (2), *wakon* (1), *wītnon* (1), *wonon* (2), *wundron* (2). On *friehan* cf. Schlüter, Untersuchungen 100 note.

[3] Cf. H. M. Flasdieck, Untersuchungen über die germ. schw. Verben III Klasse 59.

[4] Ibid. 57.

[5] Ibid. 52, 117.

class weak verb in -*ōn* is a later development, is difficult to say, but I am strongly inclined to believe that for the Germanic languages we must assume an original -*ēn* verb in view of Gothic, Old Norse, Old High German, and the traces in Old English and perhaps in Old Saxon.[6]

It is readily apparent that the long forms of quite a few Old Saxon verbs must be of secondary origin if they are found in original -*ēn* or third class verbs. Since the majority of the twenty verbs with long forms cannot possibly be denominatives and can hardly have taken over the IE denominative suffix from original denominative verbs when the latter have mostly given it up, and since they have besides many more short forms than long, I think we can dismiss the IE argument. Then we must not forget that there is but one indicative form, which owes its existence to the exigencies of metre; moreover, the expression *ford folgoiad* in the sentence *Wi witun that thînun wordun wârlîc biliđi ford folgoiad* is forced, in that the adverb *ford* is never used elsewhere with *folgon*, but always with verbs meaning 'to go', 'to bring', 'to speak' (cf. a similar case Genesis 212).

How then are we to explain the origin of the long forms if we oppose the contention that they are Indo-European? It has been observed that the late Alemannic dialect possesses long forms in the present subjunctive only. In Notker's Psalms we have *bétoiên*, *lóboiên*, *mínnoiên*, etc., and with the *o* weakened to *e*: *fórdereiên*, *tíligeie*, etc., besides the regular Notker forms *bétoên*, *lóboên*, *bíldoe*, *chlágoe*, etc. The first occurrence in Old High German of the latter is *blûchisoe* 'dubitet' in the South Rhinefranconian Isidor, written towards the end of the 8th century. This new ending owes its origin to the attempt to make a sharper distinction between the indicative and subjunctive form in the second and third weak conjugation (cf. also the Old Saxon 3d sg. pres. subj. *doe* in MS Monacensis of the Heliand and *duoian* in the Cottonianus, a 1st pl. pres. subj. with -*ian* from the first class weak verbs in -*jan*, perhaps after the analogy of the second class long forms in -*oian*; the *o* in *duoian* belongs to the diphthong *uo*, broken from *ō*). The *e* has been taken over from the strong verbs and the weak verbs of the first class. The earliest occurrence in Old High German of an *i* between the stem vowel *o* and the inflectional ending is found in the Freising Paternoster, written in the first quarter of the 9th century: MS A *richisoia* (MS B *rihiso*) 'regnet'. This form cannot be Primitive Ger-

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[6] Flasdieck 56; Schlüter, Unters. z. Gesch. d. alts. Spr. 99; Holthausen, Alts. Elementarbuch 466, Anm. 1; Wissmann 145.

manic, still less Indo-European.   The semivowel is correctly explained
as a glide or transitional sound between two vowels.[7]

Since, therefore, in Old High German as well as in Old Saxon the sub-
junctive of verbs of the -*ōn* or second weak class added the more dis-
tinctive endings of the first or -*jan* class, making new forms like OS
ahtoie, githoloian, the infinitive, present participle, and plural of the
present indicative followed suit and completed the parallelism between
the inflectional endings of the -*ōn* and the more numerous -*jan* class.
This was the more easily possible in Old Saxon because the form of the
plural of the subjunctive and the infinitive of the first and second weak
classes were in each case identical.   (Cf. OS infinitive *frummian* 'to do,
finish, complete', pres. part. *frummiandi*, pres. ind. pl. *frummiad*, 3d
sg. pres. subj. *frummie*, 3d pl. pres. subj. *frummian*, with the infinitive
tholoian, pres. part. *wacoiande*, pres. ind. pl. *folgoiad*, 3d sg. pres. subj.
ahtoie, pl. *githoloian*).   In Old High German the extended forms of
verbs of the second weak class were restricted to the subjunctive, a fact
which should make those arguing for an Indo-European origin take
thought.

As was said above, the long forms of verbs of the second weak class
are found only in the Old Saxon epics written in alliterative verse, and
an examination of the lines in which they appear reveals the fact that
they were used almost exclusively for metrical purposes, as the substitu-
tion of the regular short forms would destroy the rhythm of the lines
and run counter to the laws of alliterative verse.   Cf.

5243M	*that man ina uuĩtnòie* (C *uuĩtno*)	*uuāpnes eggiun*
5024C	(*thurbun*) *uuéros uuúndròian*	*behuī it uueldi god*
594M	*huan ēr sie gesāuuin ōstana*	*úp sĩdògean* (C *sĩthion*)
1545C	*ef thu than gèboian uuĩli*	*guodon mannon*
2573C	*lāton it thar hàloian*	*hēta lōgna*
2428M	*fórđ fólgòiad*	*endi ūs ist firinon tharf*
384C	*uuĩb uuácoiànde*	*uuardoda selbo*

In not a few instances the MSS vary between the infinitive endings
-*oian* and -*ian* (-*ion* 4136C *samnion*, 594C *sithion*): 2816M *ladoian* : C
lathian; 3181, 4183, 5216M *tholoian* : C *tholian*; 4174, 4894M *githoloian* :
C *githolian*.   These -*ian* forms are either borrowed from Old Frisian or
have dropped the *o* in Old Saxon.   In either case the change occurred
late, because we have neither gemination of the consonant (cf. also
tilian) nor umlaut.   Then we have the short form -*on* in one MS and

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[7] Braune, Ahd. Gramm. §310; Schatz, Ahd. Gramm. §300.

-*oian* (*-ogean*) in the other: 5243M *uuitnoie* : C *uuitno*; 1895, 2136, 3527M *gethologean* : C *githolon*; and *-ian* in the one, and *-on* in the other: 4796C *uuonian* : M *uunon*; 3016M *tholean* : C *tholon*.   In all of these cases the short forms are metrically deficient; even 1895C and 2136C I am inclined to view as A-verses, rather than B as Piper does (cf. verse 1257).

To sum up, the long forms of verbs of the second weak class in Old Saxon have their origin in the attempt to bring about a sharper formal distinction between the indicative and subjunctive by adding the subjunctive endings of the first or *-jan* class to the stem of the second class. Old High German stopped here and merely developed, principally in the Alemannic dialect, the semivowel *i̯*, or in part the spirant *j* (also written *g*), between the stem vowel *o* and the inflectional ending, as in the so-called verba pura (*sāi̯in, bluoi̯ent*) and elsewhere sporadically. Old Saxon went further and carried the endings of the *-jan* verbs over to the other categories, such as the infinitive, present participle, subjunctive, and one indicative—in part, no doubt, because of the metrical advantages of the longer forms.   If this interpretation of the long forms is correct, the theory of the Indo-European origin of the Old English and Old Frisian forms in *-ian* and *-ia* must be given up.   At least, with the support of the Old Saxon and Old High German removed, there is no valid reason why the forms in Old English and Old Frisian cannot be assumed to have had a development similar to those in Old Saxon, unless one should maintain that these two Germanic dialects have alone retained the Indo-European formation.   But then one would be confronted with the inconsistency that the more conservative dialects, Gothic, Old High German, and Old Norse, which have preserved the distinction between second and third class weak verbs lost in the Ingwaeonic, should in this one instance have given up an old formation. It is infinitely more likely that the Ingwaeonic dialects have evolved this new formation from the jumble of *-ōn, -ēn* and *-jan* verbs.

THE HISTORICAL STATUS OF MODERN ENGLISH [ɪ]

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[The historical status of MnE [ɪ] is problematical. On presumptive and orthoepistical grounds, most authorities believe the sound was always [ɪ]; some, notably Luick and Sweet, that an original [i], first partly lowered to [ɪ] in late ME, was completely lowered in EMnE. Spelling and rhyme evidence, here first cited, demonstrates the retention of the stage [i], on occasion, until circa 1800. The uniform [ɪ] of MnE seems to be due to the phonologization of one of two EMnE variants, probably as a result of phonemic proximity.]

I

When J. S. Kenyon describes the OE short *i* as a lower high-front unrounded vowel[1] he speaks for most of us. It is an assumption, but an assumption we all tacitly accept. We know that our MnE [ɪ] is a lower high-front unrounded vowel, that the researches of Meyer, Parmenter-Treviño, Heffner, and Rositzke[2] throw doubts on the phonemicity of mere length, and that OE and ME had, in addition to their short *i*, a long *i* which was undoubtedly higher high-front. We argue, therefore, that the OE and ME short *i* must have had the same quality as our own sound. Jespersen[3] and Ellis[4] mask this abstract argument under a detailed criticism of the Early Grammarians, whose evidence they find conflicting. Jordan,[5] willing to admit an OE 'short high-front narrow', sees in the late ME shift *i* > *ē* sure indication of a lowered ME short *i*. But in general, modern critical authority favors the extreme assumption made by Kenyon. If it is correct, if MnE [ɪ] < ME [ɪ] < OE [ɪ], this paper need not be written.

[1] American Pronunciation[6] 164 (Ann Arbor 1935).

[2] E. A. Meyer, Englische Lautdauer (Uppsala-Leipzig 1903); C. E. Parmenter and S. N. Treviño, The Length of the Sounds of a Middle Westerner, American Speech 10.129–33 (1935); R-M. S. Heffner, Notes on the Length of Vowels, American Speech 12.128–34 (1937); H. A. Rositzke, Vowel Length in General American Speech, Language 15.99–109 (1939).

[3] A Modern English Grammar on Historical Principles 1.63–6 (Pt. 1⁴, Heidelberg 1928).

[4] On Early English Pronunciation 1.107 (EETS, ES, London 1867–89).

[5] Handbuch der mittelenglischen Grammatik 57–60 (Heidelberg 1925).

Two authorities notably dissent.   Sweet, basing his opinion on the same Grammarians whose testimony Jespersen has rejected, maintains that a higher high-front (high-front narrow) lingered into the EMnE period.[6] Luick[7] is more factual.   From the *i* of early loan words and the comparatively late occurrence of the ME shift *i* > *ē*,[8] he postulates: (1) an OE higher high-front, (2) retention of the higher high-front in the North until after c1400, and in the South until after the 14th–15th centuries.   From early orthoepic testimony he assumes that this sound was retained, under the most favorable phonetic environment, until the 16th century.   Luick's theory is less significant for its conflict with Jespersen's or Kenyon's than for the light it throws on the major practical difficulty of the short *i* problem.   Fully conscious of his implied ME juxtaposition [i:—i], Luick is willing to accept presumptive evidence for the ME status of the sound, but rejects all except the earliest direct orthoepic evidence.   Sweet, alternatively, will accept all orthoepic evidence favoring the higher high-front vowel, while Jespersen rejects it in its entirety.   Not the quality of short *i*, then, but the orthoepic issue—the trustworthiness or untrustworthiness of the Early Grammarians—is the real point of difference between them.   And that, so far, has been more a conflict of opinion than of evidence.

Though phoneticians as acute as Kenrick (1773), Joshua Steele (1779), Benjamin Franklin (1768–79), and Noah Webster[9] support the Grammarians' primary notion of *i* as the qualitative short of *ee* (as in *feet*, etc.), I suppose it must be dismissed, for the moment, from this argument.   Psychologically and linguistically, no modern student of language will accept it.   Other orthoepic evidence in favor of the higher high-front sound comes principally, although not entirely, from Welshmen and Scotsmen.   The Welsh Hymn to the Virgin (c1500) and the Welshman Salesbury (1567)[10] discriminate sharply between a lower (or

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[6] History of English Sounds 217–8 (Oxford 1888).

[7] Historische Grammatik der englischen Sprache 1.137, 193, 378–9 (Heidelberg 1914–29).

[8] Not necessarily good evidence; cf. Jespersen 1.114–5.

[9] Franklin is practically always correct in any phonetic dictum, but his system was never completed to his own satisfaction.   One can never decide, therefore, whether what he says represents his final view or whether it is merely an interim statement.   Cf. Carl Van Doren, Benjamin Franklin 425–7 (New York 1938); Kemp Malone, Benjamin Franklin on Spelling Reform, American Speech 1.96–100 (1925).   On Webster's notion of 'quality' cf. G. P. Krapp, The English Language in America 1.114 (New York 1925).

[10] Sweet 217–8, Jespersen 1.63–4.

centralized?) short *i* (written with Welsh *y*) and a higher variety (written with Welsh *i* [i]), the latter chiefly before [ŋ, x, ʃ], and in unstressed end syllables.   Jones (1701), who was born in Wales, clearly advocates the higher high-front in various stressed positions, and in unstressed or semi-stressed *be-*, in medial *-i-*, *-y-* and in final *-ing*, *-ish*, *-y*, etc.[11]   The Scotsman Johnston(e) (1764) has [i] 'before a single consonant in any syllable but the last,' although his examples are mainly indecisive learned words.[12]   In addition to these, however, certain other Grammarians contribute a mite of further evidence that seems to have been largely neglected.   Jones (1701) is not alone in attributing a higher high-front to unstressed syllables; both Hodges (1643) and Price (1668) share his opinion.   Butler (1633–4) has spellings *cheesel, creeple, heedious, tween, tweest*;[13] Isaac Watts (1721) gives his *ee* ([i:] or [i]) to the final syllable of *lackey, melancholy, monkey, frumenty, honey, jeopardy, money*, and *thirsty*;[14] Walker's Dictionary has the same sound in the medial syllable of *chariot, chastity, harrier, odious, pennyworth, physiognomy, venison, workyday*, etc., and in the final syllable of *apothecary, authority, chastity, china, courtesy, dictionary, extraordinary, frumenty, futurity, half-penny, jaunty, mercy, rarity, satiety, southerly, tapestry, wholly*, etc.

Now it may be true, as Jespersen[15] suggests, that a Welshman, like a Dane, will naturally transfer his own phonemes to a foreign language, and it may be true that Jones' list of words with the higher high-front does not correspond with those in Hymn to the Virgin and Salesbury.[16] It may even be true that we should not expect a 17th or 18th century Grammarian to distinguish between a higher high-front and a lower high-front sound.   But the crux of the situation—a crux apparently never realized—lies in the unstressed vowels.   I submit that the evidence of the Early Grammarians can never be scientifically evaluated unless the unstressed short *i* is correlated with the stressed short *i*. Even today, many varieties of American and some varieties of British

[11] Dr. John Jones's Practical Phonography (1701), edited by E. Ekwall, Neudrucke frühneuenglischer Grammatiken 2. cxxxii–cxlv, ccv–ccvi (Halle 1907).

[12] Jespersen 1.63–4; Ellis 1.105.

[13] Charles Butler's English Grammar (London 1634), edited by A. Eichler, Neudrucke frühneuenglischer Grammatiken 4.13–4 (Halle 1910).

[14] The Art of Reading and Writing English (London 1721); in the Works of Isaac Watts, edited by D. Jennings and P. Doddridge 4.697–8, Table VIII (London 1753).

[15] Jespersen 1.63.

[16] But cf. Ekwall cxxxvi–cxl.

English (not to mention Australasian English[17]) have an unstressed vowel which is markedly higher and tenser than the normal [ɪ] of stressed syllables, and that may, on occasion, become [i].   When, therefore, Price, Hodges, Jones, Watts, and Walker are sufficiently acute to distinguish such a sound, we shall be ready to credit their observation. But if that is true, we cannot logically deny that their observation may be equally acute when exercised on the vowel in stressed syllables.   In other words, if Jones' [i] in be-, medial -i-, -y-, and final -ing, -ish, -y is acceptable simply because it coincides with the observable facts of MnE, it cannot be argued that his stressed [i] is not acceptable simply because the stressed sound has not survived in MnE.   In strict fact, indeed, it has survived, although not in the better known varieties of English.   The British dialect of West Somerset, notable for the many archaic features of its phonemic system,[18] has a very wide distribution of [i] in stressed syllables, and also, be it remarked, an unusually wide distribution in unstressed syllables.   Here is a valuable check on my correlation of stressed with unstressed [i].

When the Grammarians, then, exhibit a phonetic discrimination sufficiently fine for the distinction between [i] and [ɪ] in unstressed syllables, their discrimination must be recognized as adequate to make the same distinction in stressed syllables.   If Hymn to the Virgin, Salesbury, Jones, and Johnston record the distinction in both cases, their evidence cannot be summarily dismissed.   Even though their actual examples do not coincide, they cannot be rejected completely as Jespersen would reject them; still less can some be accepted and some rejected according to Luick's procedure.   Even Hodges, Price, and Butler, who make the distinction in unstressed syllables but describe the stressed short i as the qualitative short of ee (in feet, etc.), are not necessarily far from the truth.   The testimony of all these authorities, insofar as it considers short i both in stressed and in unstressed syllables, is an indivisible unit of direct evidence favoring the theory of the retention of a higher high-front vowel [i].[19]   At least, the

[17] Ellis 5.240.

[18] F. T. Elworthy, A Grammar of the Dialect of West-Somersetshire (London 1877); Ellis 5.145–55; Ekwall cxxxviii–cxl.

[19] By this argument, I do not wish to imply that every stressed short i in the 16th, 17th, and 18th centuries was a higher high-front vowel.   Already c1500, Hymn to the Virgin indicates either two developments [ɪ] and [i], or [ɪ̆] and [i].   Jones seems to agree.   Tiffin (1751) puts the existence of a generalized [ɪ] beyond all doubt.   Cf. William Matthews, William Tiffin, 18th Century Phonetician, English Studies 18.97–114 (1936).   Every successive investigation of the

burden of proof to the contrary lies squarely on the many modern
phonologists who have condemned and disregarded the Early Gram-
marians—and so far there has been no such proof.

II

Hitherto, orthoepic evidence for the status of short *i* has been the
only evidence ever offered. It is obviously not enough. Yet spelling
and rhyme evidence to clinch the problem one way or another must
fulfill rigorous conditions. MnE [ɪ] arises principally from ME *i* as
in *bit, drill, ill, skin,* from OE *y* as in *build, mill, hill, kiln,* and from
ME *e* raised to Late ME *i* as in *England, pretty, wing, hinge, singe,
twinge,* dialectal *get, chest, kettle, press,* etc.[20] Obviously, therefore,
spellings or rhymes which merely illustrate the development of ME *i*
will be inconclusive; they must also occur, in the same form, for words
containing the vowels of the other categories, and also—from the argu-
ment above—for the front reduction vowel of unstressed syllables.
Furthermore, they must be comparatively unambiguous and support
each other. There is one other difficulty. Since the actual conditions
under which Early ME *e* was raised are not yet known, and since the
actual words involved in this sweeping change have never been evalu-
ated,[21] spelling and rhymes must also afford clear proof that the words
of this category had undergone raising.

There is only one body of evidence—never systematically collected—
that satisfies these conditions. *E*-spellings, much favored by most
modern phonologists as indicating a supposed lowering of ME *i* to [ɛ],
are comparatively valueless: they may reflect the naïve transference of
ME *e* in the phonetic value [ɛ], of ME *ē*[1] in the phonetic value [i:], of
ME *ē*[2] in the phonetic value [e:], or of unstressed *e* in the values [ə],
[ɪ], or [i]; for in all these cases, *e* was a traditionally written symbol.
A-spellings are equally multivalent: they may reflect the orthographic
transference of ME *a* as [æ], of ME *ā* as [æ:], [ɛ:], [e:], or of unstressed

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17th and 18th century status of the English vowel-system makes clear the range
and multiplicity of the widely used variations, and these variations are not
mutually exclusive.

[20] Luick 376-9.

[21] The number of EMnE *i*-spellings is so enormous that it gives the appearance
of an almost complete raising of ME *e*. The change certainly seems to have
occurred as commonly before consonants other than nasals as before nasals.
Nasalization, however, may have helped to retain it in the dialects and in MnE.

a as [ə].[22] The spellings with *ee*, however, are practically univalent.
As a transference symbol used by naïve spellers, *ee* from the 15th cen-
tury onwards can be associated only with the reflex [i:] of ME $\bar{e}^1$.[23]
Words of other phonological classes to which it is naïvely transferred
must possess, therefore, a vowel which in some sort coincides with
[i:]. Even granting that some words containing ME $\bar{e}^1$ were shortened
in the 17th century,[24] the result is still the same: the first stage in such
shortenings, as the present-day beginning process in S. Scots clearly
shows,[25] is the higher high-front [i], not the lower high-front [ɪ]. *Ee*
(usually described as the sound in *feet*) is deliberately used by all the
Grammarians from Bullokar to Walker[26] to indicate the value [i:]—a
sophisticated parallel for the phonetic transferences of unschooled
authors. Finally, *ee* as a naïve symbol can be completely coördinated
with rhymes based upon ME $\bar{e}^1$.

If, therefore, ME *i* is reflected in naïve spellings by the symbol *ee*
and if it rhymes with ME $\bar{e}^1$, if ME *e* raised (Late ME *i*) is also sym-
bolized by *ee* and by *i* and rhymes with both ME $\bar{e}^1$ and ME *i*, if the
front reduction vowel of unstressed syllables is symbolized by *ee*, and
if all of these phenomena accord with the testimony of the Grammarians
—then the EMnE status of MnE [ɪ] up to the time of my latest rhymes
and spellings must have been [i]. There is no other logical alternative.

My spelling and rhyme evidence, covering all these possibilities, is
drawn from Professor Miles L. Hanley's Wisconsin Collection of Early
American Spellings and English and American Rhymes, from my own
incomplete collection of some 14,000 American spellings (with some
rhymes and some British spellings), from Orbeck[27] and Simpson,[28] and
from several recent collections of British spellings.[29] Since I am in-

[22] As, for instance, in the *a*-forms for ME *u*.

[23] I include in this statement the semi-stressed *ee* of *thirteen*, *briganteen*, etc.

[24] Jespersen 1.239.

[25] Joseph Wright, The English Dialect Grammar 34-5 (Oxford 1905).

[26] And especially by Butler, who uses it as a phonetic symbol, by Jones, and
by Watts.

[27] Anders Orbeck, Early New England Pronunciation (Ann Arbor 1927).

[28] Claude M. Simpson, Early Rhode Island Pronunciation 1636–1700; American
Dialect Society, Microfilm Monograph No. 1; published on 35 mm. film by the
American Documentation Institute (Washington D. C. 1937).

[29] Helge Kökeritz, The Phonology of the Suffolk Dialect (Uppsala 1932) =
Kökeritz; William Matthews, The Vulgar Speech of London in the XV–XVII
Centuries, NQ January 2 to April 3 (1937) = MVS; Sailors' Pronunciation in the
Second Half of the Seventeenth Century, Anglia 47.193–251 (1935) = MSP7;
Sailors' Pronunciation 1770–83, Anglia 49.72–80 (1937) = MSP8; Variant Pronun-

vestigating tendencies which were equally apparent on both sides of the Atlantic, I have made no sharp distinction between the British and the American materials. Wherever possible, however, the provenience of the American forms is indicated, and the rhymes are separately grouped.[30]

A. *Ee*-spellings for ME *i* (OE *i*, *y*)

befeed 'befit' MrR 2.1.27 (1737 Manchester Mass.); *betweext* Orbeck (1687 Plymouth Mass.); *beinfeet* 'benefit' NER 50.210 (1676 Cambridge

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ciations in the Seventeenth Century, JEGP 37.189–206 (1938) = MVP; Some Eighteenth Century Phonetic Spellings, RES 12.1–31 (1936) = MEPS; South Western Dialect in the Early Modern English Period (unprinted) = MSWD; Harold Whitehall, A Short Study of the Vowels in the Language of the Shuttleworth Accounts, PQ 10.10–26, 269–76, 384–91, 11.293–302 (1932) = WSA.

[30] For rhyme sources see my monograph, Middle English *ū* and Related Sounds: their development in Early American English; Linguistic Society of America, Language Monograph 19.10–2 (Baltimore 1939). The spelling sources of the Wisconsin Collection are given in Miles L. Hanley, English and American Pronunciation, 16th to 18th Centuries, mimeographed preliminary edition (Madison 1938). Other abbreviations, chiefly of texts in my own collections, follow: Bate = Blacksmith's Accounts of John Bate of Sharon, Conn. (from the MS in my possession); BdR = Records of Boxford, Mass.; CrR = Records of Colchester, Conn.; FgR = Records of Fitchburg, Mass. (Wisc. Coll.); HdPC = Records of the Particular Court of Hartford, Conn. (Wisc. Coll.); HdR = First Land Records of Hartford, Conn., in Conn. Hist. Soc. Collections 14 (Hartford 1912); HdV = Hartford Town Votes (Wisc. Coll.); HnCR = Indian Deeds of Hampden County, Mass.; IhR = Records of Ipswich, Mass.; LeR = Records of Lee, Mass.; MayD = Mayflower Descendant vols. 4–6 (Plymouth 1902–6); MdR = Records of Marblehead, Mass. (Wisc. Coll.); MHS = Maine Hist. Soc. Collections, especially vol. 3 (Portland 1853); MnR = Records of Milton, Mass. (Wisc. Coll.); MrR = Records of Manchester, Mass.; NER The New England Historical and Genealogical Register vols. 1–50 (Boston 1847–97); NkR = Records of Norwalk, Conn.; PhR = Records of Portsmouth, R. I. (Wisc. Coll.); PR = Parish Records (Wisc. Coll.); SnR = Records of Sharon, Conn.; SyR = Records of Salisbury, Conn.; TyR = Records of Tisbury, Mass.; YkD = Deeds of York County, Maine.

The spellings and rhymes are given here in bulk; I make no attempt to list alternative explanations of individual words. I am aware that *weedow*, *speet*, etc., may show the results of lengthening in an open syllable, *eend*, etc., the results of lengthening before the group *-nd*, *seelectmen* (cf. Bloch's fn. 36a below) the effects of stressing the first syllable. The point is that none of these examples is spelled or rhymed in a manner at all different from the very numerous other examples that cannot be so explained. Alternative explanations merely cover some few of my examples; the only explanation that apparently covers all of them—always, of course, with the possibility of later modification—is the one advanced below.

Mass.); *beets* 'bitts' Bate 26D (1781 Sharon Conn.); *breeklayers* 'brick-layers' MVS (1582 London Engl.); *breeks* 'bricks' MSWD (1728 Devon Engl.); *breeke* Hogan (a1750 Ireland); *beeldid* 'builded' Wyld HCE (1455 Engl.); *Candellweeke* 'candlewick' MVS (1623 London Engl.); *candleweeke* NER 46.425 (Surrey Engl.); *Creepens* 'Crippen's' SnR 1.258 (1741 Conn.); *creeped* 'crippled' NER 45.129 (1724 York C. Maine); *deleeured* 'delivered' Orbeck (1677 Watertown Mass.); *Deeble* 'Dibble' NER 21.334 (1635 Dorchester Mass.), HdPC 265, 268 (a1663 Hartford Conn.); *Deekan* 'Dicken(s)' HdPC 120, 121 (a1663 Hartford Conn.); *Deeks* 'Dick's' Orbeck (1679 Watertown Mass.); *Deekes* NER 50.410 (1653 Essex Engl.); *deed* 'did' Orbeck (1678 Groton Mass.), MVP (1666–76 Engl.); *deene* 'din' Gabrielson 51 (in Spenser); *deener* 'dinner' MVS (1550–63 London Engl.); *Fish keels* 'Fishkills' Willard's Diary 136 (1725 Lancaster Mass.), Nash's Diary 43 (1776–7 Abington Mass.); *feeches* 'fitchews' MSWD (1638 Devon Engl.); *Freesweed* 'Fryswith' NER 11.345 (1662 Suffolk C. Mass.); *geeue* 'give' Orbeck (1689 Groton Mass.); *geevn* 'given' SnR 1.19 (1739 Conn.); *geeven* NER 10.187 (1691 Groton Mass.); *Greegss* 'Griggs' NER 12.48 (1662 Suffolk C. Mass.); *heel* 'hill' PhR 15, 116 (1667 Portsmouth R. I.); *Incequeen* 'Inchiquin' MVP (1688–94 SE. Engl.); *keess* 'kiss' NER 13.207 (1671 Boston Mass.); *Kneekerboker* 'Knickerbocker' SyR 1.9 (1743 Salisbury Conn.); *leequidating* 'liquidating' Austin Papers 1.1118 (a1830 Old South); *Leestone* 'Liston' NER 50.18 (1778 Boston Mass.); *leettell* Wyllys Papers 91, 106, 108, etc. (a1795 Hartford Conn.); *leet(t)le* NER 9.136 (1659 Mass.), Wyllys Papers 107; *leeved* 'lived' Diehl (1570 London Engl.); *Missaseepey* 'Mississippi' Pond's Diary 42 (1756 Milford Conn.); *meetings* 'mittens' MayD 6.80 (1701 Plymouth Mass.); *permeetion* 'permission' Austin Papers 1.1387 (a1830 Old South); *Puncateeset* 'Puncatisset?' NER 41.378 (1663 Plymouth Mass.); *reede* 'rid' Hogan (a1750 Ireland); *St. Sweethinges* 'Swithin's' MVS (1621 London Engl.); *St. Sweetins* MEPS (a1729 SE. Engl.); *Sheemell* 'Shimell' MEPS (1712–8 SE. Engl.); *sheepe* 'ship' MVP (a1696 Engl.); *Sheetup* 'Shittup' or 'Skittup' NER 11.246 (1748 Duke's C. Mass.); *seence* 'since' Wyllys Papers 91 (a1796 Hartford Conn.); *seex* 'six' MVS (1698 London Engl.); *screetore* 'escritoire, scritory' NER 47.405 (1663 London Engl.); *sleet* 'slit' HdR 337 (a1716 Hartford Conn.); *Smeeth* 'Smith' NER 48.495 (1604 Essex Engl.); *Smeeth* MVS (1695 London Engl.); *spleet* 'split' MSP8 (1778 Engl.); -*spreet* '-sprit' MSP8 (1778 Engl); *steepend* 'stipend' Patten's Diary 30 (a1799 Bedford N. H.); *Tadweeke* 'Tadwick' MSWD (1633 Somerset Engl.); *teek* 'tick' Orbeck

(1699 Watertown Mass.); *teecking* 'ticking' MayD 8.174 (1655 Plymouth Mass.); *teel(l)* 'till conj.' BdR 76, 77 (1700–1 Boxford Mass.), 61 (1695), 46, 47 (1689); *teen* 'tin' MayD 6.240 (1719 Duxbury Mass.); *Transcreep* 'transcript' MVS (1621 London Engl.); *treek* 'trick' MrR 1.162 (1724–5 Manchester Mass.); *Weeden* 'Widden' NER 37.182 (1675 Mass.); *weedow* NER 23.320 (1673 Mass.), MVS (1592, 1659 London Engl.); *weedth* 'width' SnR 2.148 (1744 Conn.); *weel* 'will' NER 50.344 (1710–1 Bradford Mass.); *weete* 'wit' NER 32.182 (1624 Boston Mass.)[31]

B. Rhymes of ME *i* (OE *i, y*) with ME *ē*[1] [32]

American: **better* 'bitter' / *sweeter* NER 13.207 (1678 Boston Mass.); **build* / *yeild* BayP 28 verse 5; *building* / *yeilding* JWWP 65; *chill* / *reele* NER 13.207 (1678 Boston Mass.); *distilled* / *yield* CC 193; *fill* / *wheel* AMag. 239; *fill'd* / *field* Tompson 139; **give* / *sleeve* Trumbull 55; *give* / *believe*[33] DD 83, ABV 105, MMag. 1.56; *give* / *relieve* BMag. 2.192, MMag. 2.762, 3.639; *grin* / *seen* USMag. 357, Freneau 1.219; *him* / *deem* MMag. 2.107; *ill* / *feel* MMag. 2.58, 2.248; *in* / *seen* RAMag. 52; **kill'd* / *field* USMag. 396; *limit* / *redeem it* Trumbull Macf. 93; *rich* / *speech* Trumbull 150, USMag. 363; *sit* / *sweet* ABV 47; *skin* / *beene* Tompson 127; *slip* / *deep* MMag. 6.442; *slip* / *keep* ABV 58; *still* / *feel* AMag. 503, MMag. 2.633; *still* / *wheel* Freneau 2.285; **untill'd* / *field* ABV 179, AMag. 438; **will* / *feel* AMSMag. 256, MMag. 2.309; **wit* / *sweete* / *meete* NER 15.164 (1736 Middletown Conn.); *with* / *teeth* USMag. 1.31.

British: *begin* / *queen* Pitt Aeneid 17:409; *begin* / *unseen* Blackmore JEP[34] 222:493–5; *begin* / *serene* Fenton JEP 241:12–4; *bliss* / *Greece* Paradise 130:3; **brick* / *gleeke* Butler 191:29; *bridge* / *besiege* Pepys 3.91:8; **build* / *field* Spenser 305:lxxiii, SH[35] 1218:89, Pepys 1.17:116; *build* / *yeeld* EHelicon 117:18; *builded* / *shielded* / *yielded* SH 1521:49; *building* / *yeelding* Pepys 2.58:51; **did* / *heed* Pepys 2.78:195; *did* / *speed* Butler 46:99; *did* / *need* Butler 28:549; *did* / *breed* Butler 237:13; *distill'd* / *field* Pope 375:69; *drill'd* / *field* Butler 108:445; *fil'd* / *field* / *yeild* Spenser 119:266; *fip* / *sheep* Pepys 1.38:235; *fit* / *meet* Butler 318:8; *flit* / *meete* / *feete* Spenser 463:xvii; *gild* / *field* SH 1469:58, Pope 352:703;

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[31] The NED has also frequent *ee*-forms, quoted without source: *bill, chicken, chisel, cripple, grid-iron, grin, litch* sb. 3, *skid, skillion, spit, twist,* etc.

[32] Starred rhymes have parallel spellings in the preceding section.

[33] For interpretation of the vowel in *believe, receive,* etc., as an *ē*[1] cf. Luick 556.

[34] Johnson's English Poets (London 1790).

[35] Shakespeare, edited by Kittredge (New York 1936).

*give / sleeve SH 222:454; giue / beleeue Paradise 105:27, Pepys 1.25:164; give / believe Pope 89:39, SH 839:7; give / relieve Pepys 2.68:137; him / seem Pope 80:4; hip / sheep Butler 166:633; his / sees Otway 1.247:436; his / piece Dryden 136:167, 113:444; in / queen Pope 610:597; in / green Pope 562:252; in / between Gray 26:27; in / unseen Dryden 588:80; *kil'd / field EHelicon 179:20, Spenser 305:lxxiii, Pepys 4.249:337, Pope 343:155; kill'd / shield Pope 314:527; kill / steel Congreve JEP 34.273:119; limbs / seems Garth JEP 28.149:44, 28.152:44; lip / sheep / scrip Basse Pastorals 192; list / priest Pepys 1.25:167; *live / theeue Gascoigne 1.155; live / greeue GGG 27:36; live / grieve Waller 2.15:119; live / reprieve K. Philips 540:1; live / believe Tickell f174:35; mill / feel Pope 92:134; mist / priest King 71; mix / cheeks Butler 165:605; quick / week Herbert Temple Love Unknown 134; rich / beseech Campion 184:7; rich / speech Butler 31:661; unriddle / needle Butler 25:499; sin / green W. Bosworth MCP 2.577:437; sin / serene Otway 1.126:234, 1.236:109; sin / Queen Otway 1.163:434; sit / feet K. Philips 576:57; sit / meet Rochester 7:51; sit / feet I. Watts 135:27; skin / weene EHelicon 10:20; skin / seene / sheene / keene Spenser 334:lxv; skill'd / field Pope 287:11, 360:563, 380:427; skill'd / field Spenser 305:lxxviii; skill / wheel Pope 510:377; spill'd / field Pepys 4.180:73; *spreete / streete Church 79; stiff / belief Butler 26:483, 219:2; still / wheel Pope 78:66, Pepys 4.164:5, Otway 1.121:49; still / kneel Otway 1.284:209; still / feel I. Watts 20:6-8; submit / meet Butler 287:14; tnin / seen / been Pepys 6.391:199; *till'd / field / yeeld Basse 3Pel. 50; with / teeth SH 1456:269, Basse Sw&B 23, Butler 53:263.

C. Ee-spellings in unstressed syllables[36]

1. In initial syllables

beecase 'because' NER 14.99 (1666 Newport R. I.); beefore NER 10.83 (1659 Suffolk C. Mass.), Wyllys Papers 203 (a1796 Hartford Conn.); beegane 'began' NER 4.213 (1642 Mass.); beeginning BdR 89 (1702-3 Boxford Mass.); beeheave 'behave' Wyllys Papers 274 (1661 Hartford Conn.); beehauior NER 4.214 (1642 Mass.); beehind NER 9.345 (1658 Suffolk C. Mass.); beehoofe YkD 4.4.f95 (1696-7 York C. Maine); beelonge NER 10.86 (1660 Suffolk C. Mass.), NER 47.468 (1652 Dover N. H.); beelonging NER 47.469 (1652 Dover N. H.); beetween(e) NER 2.257 (1641-2 Dorchester Mass.), NER 47.468 (1652

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[36] From the American sources and in selection only.

Dover N. H.), Gridley's Diary 37 (1757 Farmington Conn.); *beetwene* YkD 2.2.f58 (1669 York C. Maine), MdR 306, 310 (a1683 Marblehead Mass.), Wyllys Papers 253 (a1796 Hartford Conn.); *beetwixt* NER 6.290 (1666 Suffolk C. Mass.); *beeyond* MHS 3.185 (1773 Maine); *deecased* 'deceased' HdPC 103 (a1663 Hartford Conn.); *eefects* 'effects' Hempstead's Diary 642 (a1758 New London Conn.); *eentituled* 'entitled' SnR 1.131 (1739 Sharon Conn.); *Reecieve* 'receive' TyR 227 (1778 Tisbury Mass.); *Reetrated* 'retreated' NER 8.150 (1660 Ipswich Mass.); *seelectmen*[36a] MrR 1.108 (1705 Manchester Mass.).

2. In medial syllables

esteemation YkD 4.4.f120 (1698 York C. Maine), Crane's Diary 8 (a1721 Berkeley Mass.); *eveerie* 'every' MdR 328 (a1683 Marblehead Mass.); *evideences* YkD 2.2.f48 (1668 York C. Maine); *Glouceester* NER 6.278 (1714 Gloucester Mass.); *Inteervption* YkD 2.2.f55 (1668–9 York C. Maine); *priveeteers* Hempstead's Diary 606 (a1758 New London Conn.); *spaceefied* 'specified' SnR 2.169 (1740 Sharon Conn.).

3. In final syllables

aduenceed 'advanced' NER 41.29 (1754 Needham Mass.); *ageed* 'aged' NER 14.326 (1637 London Engl.); *beliveed* 'believed' Pote's Diary 151 (1745–7 Falmouth Maine); *boundeed* 'bounded' BdR 76 (1700–1 Boxford Mass.); *devideed* 'divided' NER 41.198 (1712 Plymouth Mass.); *exsepteed* 'accepted' MrR 1.147 (1719 Manchester Mass.); *imposeed* 'imposed' Wyllys Papers 261 (a1796 Hartford Conn.); *nameed* 'named' SnR 2.135 (1743–4 Sharon Conn.); *refuseed* Greens Farms PR 144 (1711 Fairfield C. Conn.); *reviseed* 'revised' SnR 2.13 (1745 Sharon Conn.); *secureed* 'secured' SnR 2.186 (1745 Sharon Conn.); *sineed* 'signed' SnR 2.63 (1743 Sharon Conn.); *soposeed* 'supposed' SnR 2.147 (1743–4 Sharon Conn.); *traceed* 'traced' MrR 1.192 (1732 Manchester Mass.); *voteed* 'voted' NER 41.198 (1712 Plymouth Mass.), Greens

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[36a] [The spelling *seelectmen* may, on the other hand, indicate a pronunciation with stress on the first syllable. Map 443 of the Linguistic Atlas of New England shows three types with initial stress to be still widely current in northeastern New England: [ˈsilɪk(t)mən], the most common pronunciation in a large part of Maine and New Hampshire; [ˈsɪlɪk(t)-], concentrated in the Merrimack Valley; and [ˈsɛlɪk(t)-], occurring sporadically in the neighborhood of Haverhill, Mass., and elsewhere. Manchester, the town from whose records the form in the text is cited, is in Essex County, where all three of these types are today competing with each other and with the standard pronunciation.—B. B.]

Farms PR 82 (1711 Fairfield C. Conn.), TyR 300 (1796 Tisbury Mass.), etc.

Kimbeell 'Kemble' YkD 2.2.f46 (1668 York C. Maine); *Austeen* 'Austen' NER 48.288 (1723-4 York C. Maine); *coseen* 'chosen' SnR 2.9 (1743 Sharon Conn.); *choseen* MrR 1.156 (1723 Manchester Mass.); *giveen* 'given' BdR 73 (1700 Boxford Mass.); *mistakeen* 'mistaken' NER 31.299 (1709 Nantucket); *Pickeen* 'Picken' NER 48.437 (1722 Mass.); *takeen* 'taken' MayD 8.87 (1647 Boston Mass.); *Wardeens* 'wardens' LeR 24 (1782 Lee Mass.); *aegeentes* 'agents' NER 14.103 (1634 Scituate Mass.); *pareents* 'parents' Greens Farms PR 155 (1711 Fairfield C. Conn.); *greatteest* 'greatest' Wyllys Papers 403 (a1796 Hartford Conn.); *adioyneeth* 'adjoineth' YkD 1.1.f132 (1662-3 York C. Maine); *Liveen* 'living' Hempstead's Diary 3, *Liveens* Hempstead's Diary 16, 116 (a1758 New London Conn.).

acrees 'acres' SnR 1.184 (1739-40 Sharon Conn.), 1.263 (1741), 2.67 (1743), etc.; *Baysees* 'Bay's' HdR 259 (1639 Hartford Conn.); *horsees* 'horses' Massie Papers 5.9 (a1820 Virginia); *instancees* 'instances' Livermore's Diary 242 (1779 Concord N. H.); *laynees* 'lines' Merriman's Diary 663 (1759 Deerfield Mass.); *premisees* 'premises' SnR 1.288 (1741-2 Sharon Conn.); *promisees* Massie Papers 2.17 (a1830 Virginia); *sizeese* 'sizes' Massie Papers 2.41 (a1830 Virginia); *usees* 'uses' CrR 77 (1726 Colchester Conn.); *Barnabees* 'Barnaby's' NER 13.155 (1664 Suffolk C. Mass.); *Indees* 'Indies' Pond's Diary 26, 27 (1756 Milford Conn.); *magestees* 'majesty's' MrR 1.46 (1692 Manchester Mass.); *pantrees* 'Pantrey's' HdR 188 (1650 Hartford Conn.); *partees* 'parties' SnR 1.107 (1738-9 Sharon Conn.); *pertees* SnR 2.152 (1744), etc.; *Ylees* 'Ely's' YkD 1.1.f124 (1662 York C. Maine), etc.

belfree 'belfry' NkR 104 (1709 Norwalk Conn.), SnR 2.8 (1743 Sharon Conn.); *Bisbee* 'Bisbie' NER 50.178 (1776 Pembroke Mass.); *bogee* 'boggy' CrR 130 (1724 Colchester Conn.); *Bracebee* 'Braceby' NER 49.421 (1657 Lincs. Engl.); *brasee* 'brassy' NER 5.444 (1655 Suffolk C. Mass.); *bushee* 'bushy' CrR 130 (1724 Colchester Conn.); *brushee* 'brushy' MrR 1.15 (c1684 Manchester Mass.); *Coree* 'Corey, Curry?' NER 44.73 (1783 St. Johns N.B.); *Dalee* 'Daly' CrR 19 (1718 Colchester Conn.); *extreemitee* Bradford's Hist. Plymouth 169 (a1646); *Geree* 'Geary' Louisburg Journals 36 (1745 N.Y. State); *Ginnee* 'Jenny' Matthias Word-list (a1800); *Goodee* 'Goody, Godey?' Hempstead's Diary 1, 4, 8, etc. (a1758 New London Conn.); *Godfree* 'Godfrey' SnR 1.323 (1742 Sharon Conn.); *humblee* 'humbly' NER 47.439 (1651 Salem Mass.); *legacee* 'legacy' Petsworth PR 70 (a1700 Virginia); *lucee* 'Lucy'

CrR 102 (1715–35 Colchester Conn.); *Margeree* 'Margery' CrR 85 (1715–35 Colchester Conn.); *Ministree* TyR 230 (1779); *mutinee* 'mutiny' NER 23.161 (1640 Dover N. H.); *pennee* 'penny' CrR 9 (1716 Colchester Conn.); *plurisee* 'pleurisy' Hempstead's Diary 229, 237, etc. (a1758 New London Conn.); *Registree* TyR 244 (1782); *Rowlee* 'Rowley' SnR 1.350 (1742 Sharon Conn.), etc.; *Siblee* 'Sibley' MrR 1.8 (1658 Manchester Mass.), etc.; *Zealee* 'Seeley' NER 49.136 (1659 London Engl.); *thurtee* MrR 1.152 (1721 Manchester Mass.); *Vniversitees* NER 49.119 (1555 Kent Engl.); *westerlee* 'westerly' Guilford Terriers 93R (a1729 Guilford Conn.), etc.

D. *Ee-* and *i*-spellings for ME *e* raised[37]

beed(e) 'bed' MayD 7.74 (1699 Dartmouth N. H.), Fitch's Diary 1.181 (a1800 Norwich Conn.), Kökeritz (1655 Suffolk Engl.), MVS (1694 London Engl.); *beel(s)* 'bell' SnR 2.8 (1743 Sharon Conn.), Kökeritz (1655 Suffolk Engl.), *billfree* 'belfry' MVS (1650 London Engl.); *beend* 'bend' Kökeritz (1463 Suffolk Engl.); *breed* 'bred' MVP (a1730 SE. Engl.), *brid* 'bread' MSWD (1623 SW. Engl.); *Breentton* 'Brenton' Simpson (a1700 Rhode Island), *Brintwood* 'Brentwood' NER 46.253 (1753 Amesbury Mass.); *cheest(es)* Plymouth Scrap Bk. 9 (a1630), NER 7.14 (1653 Middlesex C. Mass.), NER 48.243 (1552 Essex Engl.), MVS (1607 London Engl.), NER 47.340 (1648 Lancs. Engl.), *chist(e)* Plymouth Scrap Bk. 105, 111 (a1630), PhR A21 (a1697 Portsmouth R.I.), NER 19.146 (1737 Boston Mass.), Baldwin's Diary 92 (1775–6 N. Brookfield Mass.), MVS (1553 London Engl.), Kökeritz (1536 Suffolk Engl.), WSA (a1621 Lancs. Engl.), etc.; *deeck* 'deck' TyR 56 (1708 Tisbury Mass.); *indeebted* 'indebted' Orbeck (1686 Groton Mass.); *dweels* 'dwells' SnR 2.173 (1745 Sharon Conn.), *dweelling* 'dwelling' SnR 2.173 (1745 Sharon Conn.), *dewiling* SnR 1.348 (1742 Sharon Conn.), *dwilling* Simpson (a1700 Rhode Island); *eend* 'end' SnR 1.247 (1740–1 Sharon Conn.), MHS 3.130 (c1663 Maine), *ind* Orbeck (1685 Groton Mass.), Simpson (a1700 Rhode Island), *ynde, ynd* Kökeritz (1504 Suffolk Engl.), MSWD (1536 SW. Engl.); *Eengland* MayD 4.36 (1653 Plymouth Colony),[38] *Inglande* MVS (1594–6 London Engl.), *Ynglond* Kökeritz (1476 Suffolk Engl.); *-eeuer* 'ever' NER 5.306

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[37] I give only such examples as can be substantiated immediately by parallel rhymes or *i*-spellings. My own collection and the Wisconsin Collection together have an enormous number of *i*-forms for practically all words in the ME *e* category.

[38] So also Butler (1633–4).

(1654 Suffolk C. Mass.), *whatsoeever* HnCD 52 (1671 Hampden C. Mass.), *-iuer* SnR 1.171 (1739–40 Sharon Conn.), *ivrey* 'every' TyR 23 (1690 Tisbury Mass.); *feel* 'fell' Patten's Diary 378 (a1799 Bedford N. H.); *geet(e)* 'get' MnR 9 (a1680 Milton Mass.), NER 19.147 (1737 Boston Mass.), BdR 49 (1690–1 Boxford Mass.), *git* Wyllys Papers 136 (a1796 Hartford Conn.), Turkey Hills PR 12:40 (a1791 Granby Conn.), Minor's Diary 153 (a1720 Stonington Conn.), Fargo's Accs. 74 (1775 New London Conn.), etc., *giting* CrR 27 (1724 Colchester Conn.); *Greegory* 'Gregory' NER 48.281 (1722 York C. Maine), *Griggorie*, *Grigorye* HdR 17 (1639 Hartford Conn.), *grigory* Kökeritz (1696 Suffolk Engl.), MSWD (1516 SW. Engl.); *jeete* 'jet' Kökeritz (1493 Suffolk Engl.), *Gittey* 'jetty' MSP7 (1702 Engl.); *keept* 'kept' Turkey Hills PR 14:16 (a1750 Granby Conn.), NER 22.297 (1715 Newington N.H.), YkD 2.2.f58 (1669 York C. Maine), Orbeck (1661 Dedham Mass.), MrR 2.2.23 (1736 Manchester Mass.), MVP (a1690 SE. Engl.); *keettell* 'kettle' NER 7.14 (1653 Middlesex C. Mass.), *kittle(s)* MayD 4.17 (1689 Plymouth Mass.), Bumstead's Diary 308 (a1733 Boston Mass.), Gridley's Diary 38:11 (1757 Farmington Conn.), MayD 6.79 (1701 Plymouth Mass.), *kidell* MrR 2.1.2 (1718 Manchester Mass.); *leeft* 'left' HdV 252:25 (a1716 Hartford Conn.), *lift* MdR 246 (a1683 Marblehead Mass.), Merriman's Diary 661 (1759 Deerfield Mass.), *lyfte* Kökeritz (1539 Suffolk Engl.); *leefetenant* 'lieutenant' YkD 1.1.f62 (1652 York C. Maine), *liftenant* HdV 4:16 (a1716 Hartford Conn.); *leet* 'let' Wyllys Papers 391 (a1796 Hartford Conn.), SnR 2.52 (1743 Sharon Conn.), MrR 2.1.14 (1730 Manchester Mass.), *lit* Kökeritz (1637 Suffolk Engl.); *Meedfeild* 'Medfield' NER 16.165 (1667 Suffolk C. Mass.), *Meedfield* Orbeck (1647 Watertown Mass.), *Mittfield* Orbeck (1659 Dedham Mass.); *meedow(e)* 'meadow' SnR 1.33 (1741 Sharon Conn.), Orbeck (1640 Dedham Mass.), *meeddow* CrR 147 (1667 Colchester Mass.), *midow, middow* NER 40.401 (1676 Dorchester Mass.), HdV 40:28 (a1716 Hartford Conn.), Simpson (a1700 Rhode Island); *meen* 'men' FgR 23, 60, 61 (a1700 Fitchburg Mass.), Kökeritz (1463 Suffolk Engl.); *meessage* 'messuage' YkD 1.1.f16 (1650 York County Maine); *meet* 'met' Hempstead's Diary 8:217 (a1758 New London Conn.), Westbrook's Diary 64 (1723 Portsmouth N. H.), MrR 1.166 (1725–6 Manchester Mass.), *meett* Orbeck (1701 Plymouth Mass.), MrR 1.28 (1686 Manchester Mass.); *neeck(e)* 'neck' HdR 79 (1639), 161 (a1700 Hartford Conn.), NER 10.85 (1660 Suffolk C. Mass.), Orbeck (1674 Watertown Mass., 1701 Plymouth Mass.), MVP (a1690 SE. Engl.), *nicke* CrR 150 (1670 Colchester Conn.); *Peeck(e)* 'Peck' Wyllys Papers

265 (a1796 Hartford Conn.), NER 21.332 (1635 Dorchester Mass.),
peeks 'pecks' SnR 2.189 (1742 Sharon Conn.), *picke* Wilton's Diary 281
(1672–5 Northampton Mass.); *peence* 'pence' YkD 1.1.f37 (1653),
1.1.f42 (1654), 2.2.f39 (1667 York C. Maine), *peene* 'penny' YkD 1.1.f161
(1664 York C. Maine), *pinny* 'penny' HdPC 64, 77, 82 (a1663 Hartford
Conn.); *prees* 'press' Kökeritz (1450 Suffolk Engl.), *prist* 'pressed'
Wilton's Diary 281 (1672–5 Northampton Mass.); *reents* 'rents' NER
48.244 (1552 Essex Engl.), *rynte* Kökeritz (1539 Suffolk Engl.); *seel(l)*
'sell' SnR 1.113 (1739 Sharon Conn.), 1.184 (1739–40), MrR 2.1.13
(1730 Manchester Mass.), Orbeck (1681 Groton Mass.), *sill* SnR 2.109
(1744 Sharon Conn.); *(him)seeffe* 'himself' NER 3.258 (1558 Warwick
Engl.), *(thim)silves* Fargo's Accs. 32 (1775 New London Conn.), *silfe*
Austin Papers 1.486 (a1830 Old South); *sheed* 'shed' Hempstead's
Diary 277 (a1758 New London Conn.), *sheeds* MVS (1658 London
Engl.); *speecyfie* 'specify' Orbeck (1678 Dedham Mass.), *spiccified*
Petsworth PR 217 (a1793 Virginia), *spicified* MVS (1641 London
Engl.); *steed(e)* 'stead' Orbeck (1662 Dedham Mass.), YkD 4.4.f49
(1685 York C. Maine), Simpson (a1700 Rhode Island), *Wensteed*
'Winsted' NER 37.182 (1675 Mass.), *Olmsteed* HdR 131 (1664–5 Hart-
ford Conn.), *bedsteeds* NER 34.43 (1650 Boston Mass.), *homsteed* Orbeck
(1666 Plymouth Mass.), *insteed* Wyllys Papers 298 (a1796 Hartford
Conn.), *instid* Hempstead's Diary 410 (a1758 New London Conn.),
Stidman 'Steadman' Hempstead's Diary 216, 427 (a1758 New London
Conn.); *steedy* 'steady' NER 22.352 (c1812 Niagara N. Y.), *stiddyly*
Hempstead's Diary 121 (a1758 New London Conn.); *teel* 'tell' NER
14.169 (1726 Medford Mass.); *teen(e)* 'ten' NER 7.232 (1650 Suffolk C.
Mass.), NER 17.316 (1689 Southampton L.I.), CrR 43 (1704 Colchester
Conn.), SnR 1.227 (1740–1 Sharon Conn.), etc., *teenth* 'tenth' YkD
1.2.f14 (1671 York C. Maine), MrR 2.1.12 (1730 Manchester Mass.);
tweenty 'twenty' SnR 2.178 (1745), 2.192 (1745 Sharon Conn.), etc.,
MayD 8.26 (1734–5 Wellfleet Mass.), MrR 14 (c1684 Manchester
Mass.), *tweenteth* 'twentieth' YkD 2.2.f96 (1671 York C. Maine), *twinty*
PhR 4:5 (1674 Portsmouth R.I.), MSP7 (1690, 1697 SE. Engl.), *twynty*
MVS (1596 London Engl.), *tyntie* WSA (a1621 Lancs. Engl.); *Weeb*
'Webb' NER 13.20 (1709 E. Haddam Conn.), *weeb* 'web' SnR 1.269
(1741 Sharon Conn.), *cobweebes* MVS (1582 London Engl.); *Weedingsday*
'Wednesday' SyR 2.397 (1747 Salisbury Conn.), *Widnesday* Burton's
Diary 36 (1776 Wilton N.H.), *Wydnesday* Kökeritz (1463 Suffolk Engl.);
weel(l) 'well' SnR 2.104 (1743), 2.193 (1745 Sharon Conn.), etc., *weellfare*
NER 50.210 (1676 Cambridge Mass.), *will* SnR 1.105 (1738–9 Sharon

Conn.), *wil-* Kökeritz (1463 Suffolk Engl.); *weente* Wyllys Papers 401 (a1796 Hartford Conn.), *weent* Minor's Diary 146 (a1720 Stonington Conn.), *wint* PhR A94 (a1697 Portsmouth R.I.), MSP7 (1690 SE. Engl.); *Weest* 'West' SnR 1.199 (1739–40 Sharon Conn.), *weester* 'wester' Guilford Terriers 93R (a1729 Guilford Conn.), *Weescotte* 'Westcot' NER 47.270 (1546 Oxfordshire Engl.), *weest* 'west' MrR 1.187 (1731–2 Manchester Mass.), *wist* 'west' NER 31.104 (1657 Suffolk C. Mass.), Fargo's Accs. 74 (1775 New London Conn.), PhR 4:5 (1674 Portsmouth R.I.), Pote's Diary 138 (1745–7 Falmouth Maine), Simpson (a1700 Rhode Island), *Wistminster* YkD 1.1.f89 (1659 York C. Maine), *wistoun* 'Weston' Baldwin's Diary 25 (1775–6 N. Brookfield Mass.); *weet* 'wet' Marshall's Diary 160 (a1711 Braintree Mass.), MVP (a1659 SE. Engl.), *wits* 'wets' Weare's Diary 77 (1792–8 York Maine).[39]

E. Rhymes of ME *e* raised (Late ME *i*) with ME *ē*[1] and ME *i*[40]

American: **bed / speed* AMag. 45, *bed / hid* Freneau 3.276; **bend / fiend* MMag. 3.246, *bend / wind* Freneau 3.3; **debt / fit* Freneau 241; **end / fiend* AMag. 500, Freneau 3.273, 276, etc., *end / sinned* Biglow Papers 2.385; **express'd / priest* CC 86, *express / kiss*, MMag. 7.60; **fell / wheel* CC 288, *fell / steel* CC 76, 144, 146, etc., *fell / repel / steel* Ames 291; *fled / bleed* CC 17; **get / sweet* MMag. 6.754, *get / wit* AMag. 440, *get / fit* MMag. 3.181, *get / spit* MMag. 6.121; **kept / Egypt* BayP 106 verse 7; **kettle / beetle* ABV 163, MMag. 6.696; **men / seen* CC 65, ABV 117, *men / unseen* MMag. 6.437, *men / screen* Trumbull 80, *men / skin* PMag. 1.232; **met / it* Freneau 43, *met / sit* Ames 464; **neck / cheek* BMag. 2.227, MMag. 4.123; **shed / bleed* MMag. 6.185; *sketch / speech* USMag. 400; **stead / need* Fessenden D 68, *stead / bleed* ABV 157; **tell / feel* MMag. 7.569; **well / feel* Trumbull 12, *well / reel* Trumbull 51; **vet* 'wet' / *bit* PMag. 1.137.

British: **debtor / fleeter* Pepys 2.72:258, *debts / wits* Pepys 5.326:275; **dwell / feel* Pope 13.770, *dwell / steel* Pope 13.769, *dwell / hill* Spenser 370:xxix; *epithet / discreet* Butler 224:18; **eend / weend / feend* Spenser 386:xli, *end / fiend* Autolycus 119:9; **farewell / feel* Thomson 509:1; **fell / steel* Pope 449:27, *fell / wheel* Pope 512:473, *fell / heele* Tottel 87:26, *fell / kill* King 141; **get / meet* Pepys 4.171:33, *get / bit* Herrick 305:3, *get / it* Herbert Temple 135:3, *get / wit* Pepys 2.57:65; **kettle /*

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[39] Numerous other *ee*-forms, not cited here, lack substantiating *i*-forms.

[40] Representing a very small selection from the rhymes available in the Wisconsin Collection. Starred rhymes have parallel spellings in the preceding section.

beetle Pepys 5.269:61; **left / gift* Pope **326:272**; **meddow / widdow*
Pepys 1.43:258; **men / scene* Pope 215:175, 331:634, 396:13, *men /
seen* Pope 393:339, 509:300, etc.; **met / sheet* Pepys 1.9:64; *pet / wit*
Brittons Bowre 28:10; *pest / priest* Pope 263:119; **stead / feede* Paradise
110:27, *stead / succeed* Butler 41:899, *instead / deed* Butler 3:61;
*wele / heele Tottel 87:26; **west / fist* Lyly 3.351:346.

III

From the tests proposed in II above, the *ee*-spellings, before they could
be considered satisfactory evidence for the higher high-front status of
EMnE *i*, would have to meet certain rigid conditions. They would
have to occur not only in words containing OE, ME *i* but also in words
containing OE *y* (ME *i*), and ME *e* raised (Late ME *i*), and for the
front reduction vowel of unstressed syllables. They would have to be
supported, insofar as they expressed the reflex of OE *i*, *y*, by rhymes of
ME *i* with ME *ē¹*, and insofar as they expressed the reflex of ME *e*
raised (Late ME *i*), by rhymes of ME *e* both with ME *ē¹* and ME *i*.
The evidence summarized in II satisfies all these conditions in all re-
spects. However much naïve spellings for EMnE *i* may be distrusted,
it cannot be denied that parallel spellings, parallel in form, occur both
in the stressed position—the x of our equation—and in precisely those
unstressed positions where a higher high-front is plainly indicated by
the Grammarians. It cannot be denied that series of the type *in-
deebted, debtor / fleeter, debt / fit—dweels, dwells / feels, dwilling, dwell /
hill—geet, git, get / sweet, get / fit*, demonstrate, when taken with the
ee-forms for ME *i*, the essential uniformity of EMnE *i* and *ee* [i:].
It cannot be mere accident that Jones and Butler have *Eengland,
Eenglish* as parallels for our spellings in the same form; that Jones
equates the vowel of *be-* with *ee* at a time when our spellings show
frequent *bee-*; that Nares[41] notes *instid*, Adams[42] *ind*, and Cooper[43]
eend—these in addition to such tell-tale rhyme pairs as *stead / feed,
end / fiend, end / sinned*. The accuracy of the rhymes and spellings,
therefore, may be taken as demonstrated. But in that case, the evi-
dence of Grammarians, rhymes, and spellings is completely unified, and
the dicta of the Grammarians turn out to be, after all, substantially
correct. If logographic and orthoepic evidence can ever be trusted, one

[41] Robert Nares, Elements of Orthoepy 55 (London 1784).
[42] James Adams, Euphonologia Linguae Anglicanae 66 (London 1794).
[43] C. Cooper's Grammatica Linguae Anglicanae (1685), edited by J. D. Jones,
Neudrucke frühneuenglischer Grammatiken 5.74 (Halle 1911).

important status of the MnE [ɪ] in the EMnE period was the higher high-front [i], the Grammarians' 'qualitative short of *ee.*'

This conclusion has several important corollaries. First, although no attempt has yet been made to uncover all the *ee*-spellings hidden in obscure British sources,[44] I have cited enough spellings and rhymes here to show that EMnE *i* had approximately the same status on both sides of the Atlantic, in widely separate speech-areas, and among diverse social classes. The pronunciation of English underlying the Pepys Ballads probably differed from that of Pope, and both may have differed from that of the Americans, Trumbull and Freneau. The pronunciation of the town-clerk of Tisbury, Massachusetts, probably had little in common with that used by Lady Verney. Yet the Pepys Ballads, Pope, Trumbull, Freneau, the Tisbury clerk, and Lady Verney all appear to have known the same pronunciation of EMnE *i*, and all seem to have had the raised, non-literal vowel in such words as *men, dwell, fell, left, chest, kettle,* etc. In other words, the phonological conditions investigated in this paper are general English rather than regional in scope, just as the uniform testimony of Grammarians drawn from several social classes and many areas of the British Isles would lead us to expect.

Secondly, the conclusion that the higher high-front vowel survived in some cases until c1800 forces a modification of Luick's theory of lengthening.[45] In the North, ME *i* may have been lowered and lengthened to [e:] in open syllables—our evidence gives nothing for the Northern dialect and is too late to prove anything about a 13th century change. But Luick's attempts to explain Southern or Midland *e-* and *ee*-spellings on the same theory conflict sharply with our evidence. Taken alone, early *ee*-spellings for *build, cripple, give, live, smith, spit, sprit, widow,* etc. might indeed be thus explained. But since they are spelled and rhymed exactly like other words in the ME *i* category, since they coincide in spelling and rhyme with words of the ME *e* raised (Late ME *i*) group, and since their spelling is the same as that for the front reduction vowel of unstressed syllables, either Luick must be correct on a much vaster scale than he ever visualized or we must conclude, with Jespersen,[46] that Luick's theory is erroneous.

[44] Earlier students of English phonology seem largely to have neglected the *ee*-spellings. There has certainly been no serious attempt to collect them. Cf. Zachrisson, Wyld, Süssbier, et al.

[45] Cf. Luick 393–409 for the gist of Luick's own theory and an excellent review of the literature.

[46] Jespersen 1.114–5.

Actually, Luick himself would have been the last to claim a process of lowering, lengthening, and subsequent raising for Late ME i and EMnE i of all origins and in all positions, unstressed and stressed. He possessed *ee*-spellings as evidence for open syllables; lacked them for our examples in closed syllables, *bitt*, *Dick*, *kiss*, *hill*, *till*, etc. From the standpoint of this paper, even the Late ME *e*-forms that he cites are more likely to be reverse-spellings indicating the raising of ME $\bar{e}^1$ to [i:] or the raising of ME e to [i] than direct spellings for a lowering and lengthening of ME i to [e:]. As for his *ee*-spellings, he seems to have forgotten that just as soon as ME $\bar{e}^1$ was raised to [i:], *ee* ceased to symbolize merely the original length distinction between ME $\bar{e}^1$ and ME e, but began to express a definite vowel-quality (the higher high-front). *Ee* in our spellings is a qualitative, not quantitative, symbol: as the 17th century quantity changes and Elphinston's dicta[47] prove, original phonemic oppositions of the type [fi:t—fit] (*feet—fit*) had by 1750, at the very latest, given place to such oppositions as [fi:d—fit] (*feed—feet*). Thus, the temporal range (c1450–c1830) as well as the sheer number of our spellings works against the Luick theory. Principally, however, the theory breaks down against our numerous *ee*-spellings for ME e raised (Late ME i) and for the front reduction vowel.

Luick's hypothesis has, none the less, a suggestive value. At least, it attempts to explain both how and why the Late ME phonological pattern was altered; and some such explanation is obviously demanded.

If my argument is correct, my evidence trustworthy, ME i of all origins was a higher high-front vowel [i]. In EMnE this higher high-front quality was retained, although, from Hymn to the Virgin, Salesbury, Jones, Johnston, and several other authorities, it appears that a new lowered type [ɪ] was gradually gaining popularity. By the time of Tiffin (1751) and Walker, the new type seems to have ousted the older from cultivated British English, while the older survived, to some extent, in American English. Since 1800, the newer type has prevailed everywhere except in West-Somerset.

Phonemically, these changes are difficult to account for on any but

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[47] Elphinston's empiric observation was sufficiently acute to allow him to anticipate the conclusions of Meyer, Heffner, Rositzke, etc. See E. Müller, Englische Lautlehre nach James Elphinston 121–2 (Heidelberg 1914), and Jespersen 1.450. In estimating Elphinston's phonetic gifts, however, it will always be wise to wonder how far he had been influenced by his close London neighbor, Benjamin Franklin.

grounds of pure speculation.   We might, indeed, explain the replacement of two types by one as due to phonological generalization, giving MnE, MnA [ɑʊ] (earlier [ɔ̆u] and [ɑʊ]) as a parallel;[48] but the parallel ignores other factors.   For one thing, the replacement of [i] by [ɪ] between c1730 and c1800 occurs within the phonemic environment and time-limits of a better known and more spectacular change—the raising of ME $\bar{e}^2$ from [e:] to [i:].   It is a curious coincidence, if it be coincidence at all, that two sounds so closely related as ME $\bar{e}^2$ and ME i should both readjust their phonemic position within the 18th century, and that the outcome of the readjustment should be the preservation of a phonemic distinction threatened with obliteration.   In the cultivated English of c1700 ME $\bar{e}^2$ was [e:], ME i apparently [i] and [ɪ].   In what is supposed to be the same type of English of c1800, ME $\bar{e}^2$ had become [i:] and ME i had become [ɪ].   Had ME i remained at [i] while ME $\bar{e}^2$ became [i:], only a retained phonemicity of length, if it ever existed, could have prevented confusion between them.   And by the 18th century that, whether it had ever existed or not, was gone.

The same situation is paralleled at a much earlier date.   As far as we can trace it, the first occurrence of the lowered [ɪ] is c1500, precisely at the period when ME $\bar{e}^1$ had been raised to [i:].   Here again, therefore, the juxtaposition of [i:] (this time from ME $\bar{e}^1$) and [i] seems to result in a lowering of the latter.   Yet, significantly enough, ME i was not in general lowered to [ɪ], nor had it been lowered, as far as our evidence will tell us, during the preceding ME period when ME $\bar{\imath}$ as [i:] had for some centuries been in phonemic opposition to ME i as [i].   There are thus three contrasting periods during which the opposition can be studied, with most illuminating results.   In ME, [i:] could apparently exist side by side with [i] without phonemic confusion; in EMnE [i:] seems to have existed side by side with [i], but with a certain degree of confusion reflected both in the partial lowering of ME i and probably in the 'shortenings' grit (OE grēot), rick (OE hrēac, hrēc), britches (OE brēc), etc.; in 18th century English, the opposition [i:—i] could apparently no longer exist, and [i], wherever it survived, was apparently lowered.   Ostensibly, therefore, the primum mobile of the lowering of ME i lies in the decay of the phonemic distinction between long and short vowels, in that effect of the Great Sound Shift—often disregarded —which transformed a nicely integrated and gradated series of long and short vowels into a partially imperfect qualitative system.   And this

[48] Whitehall, Development of ME $\bar{u}$ 56-8.

explanation may be correct. But there is one other possibility. ME $\bar{\imath}$ left ME i as a higher high-front vowel undisturbed. The raising of ME $\bar{e}^1$ to [i:] disturbed it slightly. The raising of ME $\bar{e}^2$ to [i:], reinforcing the earlier raising of ME $\bar{e}^1$ to [i:], was apparently sufficient to cause a lowering of the 18th century i from the higher high-front to the lower high-front position. Can it be that there is such a thing as phonemic saturation? that a phonemic pattern will survive mere proximity as long as the number of words in each phonological category is not overwhelming? that the pattern will be changed if too many words, or words of too common occurrence, fall under a single phoneme?

Either way, final proof is beyond our present equipment. Before phonemic analysis can be applied to earlier periods of English we shall need to know how many words fall under each phonological category in OE, in ME, in EMnE, and even require some estimate of their relative frequency in actual use. A frequentative index is the next great desideratum for the student of the history of the English language. Meanwhile, for the special purposes of this paper, and particularly for the correlation of the lowering of ME i with the raising of ME $\bar{e}^1$ and $\bar{e}^2$, there remains one fact which will balance a good deal of pure speculation. The dialect of West-Somerset, the only variety of English which still retains an unambiguous higher high-front [i], is also the only variety of English with consistent traces of an unraised ME $\bar{e}^1$ and ME $\bar{e}^2$.[49]

[49] Luick 555 note; Ellis 5.134–5; Ekwall cxxxviii–cxl.

THE HURRIAN VERBAL SYSTEM

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[A morphological and syntactic analysis of Hurrian verb forms reveals three verbal types: an action-verb (interpreted as active, in opposition to Speiser) and two kinds of impersonal-intransitive verb. See the concluding paragraphs.]

The intricate problems raised by the verbal forms of the Hurrian language have recently been subjected[1] to a penetrating investigation by E. A. Speiser. The essence of his results may be summarized as follows:

The Hurrian verb, when stripped of all accessory elements,[2] presents itself in two main types which hereafter may be numbered (I) and (II). The difference in form coincides with a fundamental difference in syntax.

Form (I) invariably ends in a pronominal indicator which, in one way or another, marks the three persons; more specifically, $-(y)a$[3] goes with the 3d person,[4] $-u$ with the 2d person, and $-au$ with the 1st person. Whenever the 'agens' is introduced by a noun, it is characterized by the suffix $-š$. The sentence must furthermore contain another nominal form, that in $-n$;[5] it usually precedes the $š$-form and denotes the 'affectum'.[6]

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[1] JAOS 59.289–324 (1939); also separately as American Oriental Society Offprint Series No. 10.

[2] They indicate tenses, modes and other variations and are not all clear yet as to their force and use.

[3] The y of this suffix forms perhaps part of the stem; it is visible only in the present, which consists of stem plus pronominal indicator, and there only in the 3d person. There is no reason to ascribe to forms of the type tanya a potential force, as do Bork (Die Mitannisprache 49, 52) and Gustavs (Reallexikon der Vorgeschichte 8.221; Namenreihen aus den Kerkuk-Tafeln 57 f.). Speiser (297), and before him Friedrich (Kleine Beiträge zur churritischen Grammatik, hereafter quoted as Kl.B., 8) have correctly returned to the opinion of Messerschmidt (Mitanni-Studien 15 f.) that tanya corresponds as 3d person to tanau 1st person.

[4] As far as is known, numbers are not differentiated.

[5] In an article soon to appear in JAOS, I have shown that the suffix $-n$ of this form is detached from its noun in certain circumstances and appears as an enclitic after the first word of the sentence. This implies a denial of Friedrich's (Kl.B. 9) and Speiser's (BASOR 74.6; JAOS 59.291) belief that the $-n$ appears only occasionally.

[6] More rarely the 'effectum'. The terms 'subject' and 'object' have been avoided for reasons that will presently become clear.

Speiser agrees that this type represents the Tatverbum, but considers it necessary to take it in a passival sense. For the sake of clearness a few characteristic examples may be quoted together with Speiser's[7] translation:

aš-ti-i-in še-e-ni-iw-wə-ú-e (34) *a-ru-u-ša-ú* (IV 33 f.) 'my brother's wife was given by me'.

še-e-ni-iw-wə-uš-ša-a-an aš-ti ša-a-ru-u-ša (III 1) 'and by my brother a wife was requested'.[8]

[¹*Ma-*]*ni-en-na-a-an š*[*e-e-*]*ni*[*-iw-wə-u*]*š* (108) *pa-aš-šu-u-u-ša* (II 107 f.) 'and Mane was sent by my brother'.

i-nu-ú-ut-ta-a-ni-i-in ḫé-en-ni še-e-ni-iw-wə-uš ta-a-ti-a (75) [*i-*]*nu-ú-me-e-ni-i-in ḫé-en-ni še-e-ni-iw-wə i-ša-aš ta-a-ta-ú* (I 74 f.) 'as I am indeed now(?) loved by my brother, and as my brother is indeed now(?) loved by me'.

Forms (II) ends in *-a*; it is invariable, and where pronominal indicators are attached they are not inherent parts of the form. The sentence in which form (II) is found may contain the *n*-form of the noun or a pronominal suffix instead of it; it can never contain the *š*-form of the noun. Speiser has correctly determined the force of this form as intransitive.[9] Examples are (again with Speiser's translation):

a-ti-i-ni-i-in ¹*Ma-ni-e-na-an še-e-ni-iw-wə-ú-*[*e*] (14) *pa-aš-ši-i-it-ḫi ú-ú-na* (II 13 f.) '. . . . . Mane, my brother's envoy, comes'.

a-ti-i-ni-i-in ta-še-e-en id-du-u-uš-ta (I 90) '. . . . . the present is on its way'.

an-šu-u-a-[*at-*]*t*[*a-a-a*]*n* (62) *pt-su-uš-ta te-u-na-e tiš-ša-an* (II 61 f.) 'on account of that I am very glad indeed'.

Forms (I) and (II) are mutually exclusive. There exists, however, a group of forms which agree with form (II) in their syntactic behavior and nevertheless are derived from stems which may also appear in form (I). They end in the characteristic vowel *-i*, which, as also in the other forms, may be preceded by temporal and modal elements. To the suffix combinations *-uš-i* (pret.) and *-et-i* (fut.) Speiser adds *-ewə* as likewise pertinent.

Speiser conceives of this form, which may hereafter be numbered (III), as an aspect capable of expressing a special nuance of both (I)

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[7] Details of transliteration, not directly connected with the subject of this paper, will not be discussed here.

[8] Speiser would literally translate here (and analogous adjustments should be made in the other examples), 'and Mane by my brother (was) loved-pret.-by-him'.

[9] Cf. LANG. 15.215 ff.

and (II). He ascribes to it 'resultative', 'imperfective',[10] indefinite, or conjunctive connotation.

Good examples are (interpreted in Speiser's manner):

un-du-ma-a-an še-e-ni-i[w-w]ə-e-en pa-aš-š[u-ši ¹Ma-]ni-en-na-a-an š[e-e-]ni[-iw-wə-u]š (108) *pa-aš-šu-u-u-ša* (II 107 f.) 'and now my brother was going to send;[11] and Mane was delegated by my brother'.

a-i-ma-a-ni-i-in šuk-ku-u-um-ma-ma-an du-ru-pè (112) *[še]-e-ni-iw-wə-ú-a* ᴷᵁᴿ*u-u-mi-i-ni-i-ta wə-še-wə pa-aš-ši-na-an še-e-ni-iw-wə* (113) *šu-ú-ú-ta* (III 111 ff.) 'if, however, any trouble should indeed happen for my brother to (his) country, my brother should send (a message) to me'.[12]

The positing of the three forms and the clarification of their syntactical peculiarities is very great progress for which Speiser deserves full credit. The system which he sets up can, however, be improved upon. It seems to me that (1) the interrelationship of the three forms, and (2) the connotation of form (III) need reconsideration.

With regard to the first point, I believe that form (III) must be recognized as a third main type of the verb. Speiser fails to produce examples of *i*- and *a*-forms based on identical stems. As far as I can see, such examples do not exist.

The two words *pisanti* and *pisa*, both approximately 'be glad' (Speiser 318), are no exact pair. The unexplained element *-ant-*[13] of the former may serve to transfer the stem from the *a*-form to the *i*-form. The difference in meaning which results may roughly correspond to that of 'rejoice' (intransitive) and 'be pleased' (passive).

The case of *ma-a-an-ni* and *ma-a-an-na-at-ta-ma-an* etc. (Speiser 302 ff.) is better altogether excluded. It is full of obscurities; although

[10] The quotation marks are Speiser's (318 f.).

[11] Thus, without an object, according to Speiser 317 f.

[12] Cf. my own translation below, p. 133.

[13] As to *pisanti*, the theory could be advanced that the enlargement consists of the incorporation of the pronominal *ant-* (cf. Friedrich, RHA 5.96) in the verb. But, when II 55 is compared with IV 44 in this connection, it must not be overlooked that *an-du-ú-a . . .* of the former corresponds with *gi-el-ti-i-wə* of the latter. Nor are there other examples of such a treatment of pronouns; and, finally the shift from (II)—note particularly *pí-su-uš-ta* II 62—to (III) would remain unexplained. The forms *pí-su-uš-ta-iš* (I 80) and *pí-sa-an-ti-iš-tén-na-a-an* (IV 44) have been omitted for the time being; the imperative forms which they represent deserve special treatment.

some forms have the appearance of verbs,[14] it may rightly be doubted whether the word was originally a verb.

There remain the forms in *-ewə*, which, it is true, belong partly to (II) and partly to (III). Before they are utilized, however, their place in the set-up of the Ḫurrian verb must be more accurately defined. The lack of sufficient material makes it no easy task. As far as the final vowel is concerned, the fact must be recalled that it is determined as (originally) *a* by the occurrences which attach suffixes (Speiser fn. 45). In its behavior, the suffix *-ewə* may be compared with the other suffix *-ikki/-ukku* which we find with *-a* in

ḫi-il-lu-ši-ik-kat-ta-a-an (I 52)
ú-ú-nu-uk-ka-la-an (IV 3)

but with *-i/-u* in

ta-a-du-ka-a-ru-ši-ik-ki (II 79)
ḫi-il-lu-ši-ik-ku-u-un-ni (IV 11)

belonging to (III), and in

ú-ru-uk-ku (II 99, 101, III 46, 123)
ú-ru-uk-ku-un-na-ma-an (III 124)

belonging to (II). This *-kk*-suffix is in a class definitely different from that of *-uš-* and *-et-*, which characterize tenses (pret. and fut. respectively). It has its place after these suffixes, and it is the vowel between the two sets of suffixes which permits us to assign the pertinent forms either to (III)—with *i*—or to (II)—with *u*, perhaps as elsewhere derived from a more original *a*.

The possibility of suffixes after the characteristic vowels seems confirmed by the negative forms

ḫi-su-ú-ḫu-ši-uw-wə (IV 33)
ta-a-nu-ši-uw-wə (II 113)
ku-zu-u-ši-uw-wə-la-an (IV 46)

which belong to (III) (see below fn. 44).

If this is accepted, one must conclude that in cases like

ta-a-tu-ka-a-ar-ri-e-wə (III 65, IV 123)

the final *-ewə* contains the vowel *i* of form (III) in its *e*, while the type of

dup-pu-li-e-wə (III 100)

developed its *-ewə* from *-a-ewə*. In other words, the fact that forms

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[14] Clearly verbal are *ma-a-an-nu-uk-kal-la-a-an* (IV 2) and *ma-a-an-nu-li-e-wa-a-al-la-a-an* (II 122); furthermore, because of structural identity of the context, *ma-a-an-ni-i-ni-i-in* (IV 13), *ma-a-an-nu-uk-ku* (II 91), and *ma-a-an-nu-uk-ka-ti-la-an* (III 17).

(II) and (III) have become indistinguishable when enlarged by the suffix -ewə[15] is due to a relatively late conflation.

Hence, no reason remains for denying that the three forms of the Ḫurrian verb, that in -ya etc., that in -a, and that in -i, enjoy equal rights in the verbal system.

This situation is bound to influence our attitude towards the question as to the meaning of the form in -i. This meaning must be in the same category as that of the two other forms; in other words, it can hardly be sought in the realm of tense or mood.

The problem must be dealt with on the basis of concrete examples. The most convenient starting-point is provided by sentences which contain forms of the stem pašš- 'send'; it occurs frequently enough to make a number of varying examples available.

As a first group I quote such instances as display the verb pašš- together with a noun in -n. There are three of them:

(1) un-du-ma-a-an še-e-ni-i[w-w]ə-e-en pa-aš-š[u-ši[16]] (II 107).

(2) [un-du-ma-a-an[17]] ḫé-en-ni-e-en še-e-ni-iw-wə pa-aš-šu-ši (I 65).

(3) pa-aš-ši-na-an še-e-ni-iw-wə (13) šu-ú-ú-ta (III 112 f.)

It must be particularly emphasized that all three examples exhibit, besides the n-form šeniwwen (in sentences 2 and 3 split into -n and šeniwwə[18]), a second suffixal -n which has hitherto been rendered by 'and'. This translation is based on the assumption that -an and -man are variants of the same particle.[19] After it has been shown, however, that -man must be analyzed as -ma, possibly meaning 'and', plus the nominal suffix -n, it is logical to see in the -(a)n without preceding -ma the same nominal suffix. The thesis works out well with sentences containing form (I) and must be accepted throughout. This gives us two n-suffixes in the sentences with form (III).

The same -n is encountered in a second group of examples showing forms of pašš- 'send': those which show the noun replaced by pronominal elements:

[15] The remark may be in order that this would point to a meaning of -ewə which modifies the respective tense modally, as the negation does. I have come to consider this form tentatively as a modus potentialis, an opinion which to some extent coincides with that of Messerschmidt, Bork and Friedrich.

[16] The restoration is justified by the following example.

[17] A word with two enclitics is needed (see the article mentioned in fn. 5); another possibility is [a-ti-i-ni-i-in], see example (4) below.

[18] Cf. fn. 5.

[19] See particularly Friedrich, Kl.B. 14 ff.

(4) [*a-ti-i-ni-*]*i-in šu-ú-ta-ma-an pa-aš-šu-ši* (I 50).

(5) *pa-aš-še-ti-i-tan* (117) *še-e-ni-i*[*w-wə-t*]*a* (III 116 f.).

The sentence (4) which speaks of 'sending to me' must necessarily contain[20] a reference to the third person 'he'; it can only be found in the *-n* of either the first or the second word. The close parallelism which exists between sentence (5) and sentence (3) above[21] leads us to expect a reference to the first person, which is duly found in the *-ta*[22] of *paššeti-ta-n*. In either case, then, an additional *-n* remains unaccounted for.

Hence, the statement is justified that the normal structure of sentences containing our form (III) is as follows:

noun-*n* + particle *-n*—verb in *-i*

(this when the noun starts the sentence) or

verb in *-i* + particle *-n* + *-n* of the noun—noun

(this when the verb starts the sentence and a noun is involved) or

verb in *-i* + pronominal suffix + particle *-n*[23]

(this when the verb starts the sentence and a pronoun is involved).

Beyond any doubt, the relations between the *i*-form and the *ya*-form are quite close. But, while the *ya*-form is inflected, the *i*-form is

[20] Speiser (313) translates: 'and my brother should send (a message) to me', indicating by the parenthesis that he feels that some object is needed but missing.

[21] My own analysis of the passage III 110 ff. differs slightly but significantly from Speiser's (313 ff.). It is evident that the lines III 110 ff. and 115 ff. correspond to each other, the earlier part prescribing a certain procedure to be applied when an emergency arises in Egypt, the later, when in the Mitanni country. Each part consists of four sentences (a), (b), (c), and (d), which appear in the earlier part in the sequence a-b-c-d, but in the later in the sequence b-a-c-d. The sentence under discussion is (c); in the earlier part it contains the *n*-form *še-e-ni-iw-wə*(-*en*) and the directive *šu-ú-ú-ta* 'to me'. In the reciprocal sentence one has the directive *še-e-ni-iw-wə-ta* 'to my brother' and must postulate some form of the pronoun 'I'.

[22] An objection (see Speiser 312) to this may be raised on the ground that this pronoun should appear spelled with double *tt*, particularly since the double spelling of stops indicates phonemically different sounds. The objection must be rejected; the first person is absolutely necessary (see fn. 21), and the passage includes one of the rare occurrences of the sign *-tan*. Such signs act strangely as to doubling of their first components in Old Babylonian likewise (cf. Orientalia 6.12 fn. 4).

[23] A certain difficulty arises from the following situation. In sentences which contain the Tatverbum one has, as stated above, besides the agens characterized by *-š*, the affectum in *-n*. Whenever the nominal *n*-form is replaced by an enclitic pronoun, one gets not merely *-tta* 'me', or *-lla* 'them', but *-tta-n* and *-lla-n*. Is this apparently superfluous *-n* due to the analogy of the constant use of the noun with *-n* in the same syntactical context?

rigid. Syntactically, form (I) is always accompanied by an expression of the agens, normally the noun in the *š*-form; form (III), on the other hand, is never connected with the noun in -*š*. Speiser is well aware of these facts; he also considers the most natural explanation, namely that the *ya*- and the *i*-forms might represent the active and the passive respectively of the same stem. He rejects it,[24] however, on the ground that the *ya*-form is already passival itself.

Even if this premise is tentatively admitted as true (in my opinion it is wrong), the argument cannot be accepted as binding. Speiser's standpoint would perhaps be justified, if the case of the two syntactical types were one of complete polarity. If the interrelationship between the father who gives his daughter away and the daughter who is given in marriage must be seen, in all circumstances, from the standpoint of the daughter ('the daughter is given away by the father'), the existence of a passive form other than the one which is allegedly encountered in form (I) might be doubted. But, actually, the Hurrian *i*-sentence does not compete with the *ya*-sentence. With the former, to put it with Speiser,[25] there is no object; with the latter, there is one always. Two different passives may very well exist in one language.

Light is thrown on the situation by a circumstance of significance which Speiser has overlooked. He renders the so-called stem-form of the noun which is identical with the *n*-form according to our terminology as a 'nominative' wherever it occurs. Thus he translates

še-e-ni-iw-wə-uš-ša-a-an aš-ti ša-a-ru-u-ša (III 1) 'and a wife was requested by my brother,'[26] and

un-du-ma-a-an še-e-ni-i[w-w]ə-e-en pa-aš-š[u-ši] (II 107) 'and now my brother was going to send'.[27]

The question is justified: In what manner is the sentence

[. . . . .]-*a-an ša-a-la-pa-an aš-ti-iw-wə-ú-un-na a-ri* (I 51)[28]

to be understood? Speiser, if consistent, would have to translate:

[24] 309 f.

[25] 317.

[26] 291.

[27] 317 f.

[28] The restoration is doubtful; the fact that *ša-a-la-pa-an*, the second word, contains the *n* of the *n*-form may indicate that the first word already carried two suffixes. The verb *a-ri* has since Messerschmidt (Mitanni-Studien 18, 31) been rendered as an imperative 'give'. But Messerschmidt remarks rightly: 'Für die Übersetzung ... durch Imperativ ... bieten die anderen Formen auf *i* keinen Anhalt, da sie sämtlich an noch unverständlichen Stellen stehen.' Our present knowledge of the forms in -*i* counsels against an imperative.

'. . . . . your sister is going to give as my wife' and this would evidently give the situation a twist which is impossible. It is not the sister who gives, on the contrary the sister is given in marriage. This is by no means an isolated example, there exist more of the same kind (see below, p. 135 f.).

It must be stated that the passival translation of the verb in *-i* is equally impossible. One cannot translate in I 51

'your sister is given as my wife,'

excellent as the sense may be; this would necessitate the translation:

'my brother is sent'

in II 107, which does not make sense in that particular context.[29]

The inevitable conclusion must be drawn: the form in *-i* is neither passive nor active. But what else could it be?

It is precisely here that the additional *-n*, so far unaccounted for, comes in. Its relation to the suffixed pronoun 'him' or 'it'[30] is obvious. If it is taken as 'it', we are led to the working hypothesis that the form in *-i* is impersonal. This accords well with the fact mentioned above that the form does not inflect and is never found with the 'agentive' in *-š*. Incidentally, a sentence like

pí-sa-an-du-ši-i-it-ta-a-an (IV 9) 'there was joy on my part'

is strangely reminiscent of expressions like Lat. *taedet me*, its opposite.

On the basis of such an expression it is easily understood how both the 'agens' and the 'affectum' found with the verb in *-ya* can become 'affectum' when this form is replaced by that in *-i*. The action has taken place (to exemplify with the instances just quoted) 'on the part of the brother' and 'with regard to your sister'.[31] It is not so much the action which is envisaged by this peculiar expression (whether or not it is seen from the angle of the acting or the affected person), it is rather the effect which the performance of an action produced upon the persons or things involved. When Speiser ascribed a 'resultative' and 'imperfective' force to the form, he apparently was motivated by a similar feeling.

This interpretation is perhaps supported by a detail of form. The

[29] The sentence in question starts a new section and is immediately followed by the sentence quoted above on p. 126, which means (in Speiser's translation) 'Mane was sent by my brother.'

[30] Cf. LANG. 15.253.

[31] I want to emphasize particularly that the varying translation is merely due to the inability of the English language to express the relationship in question by a uniform expression.

Tatverbum *tat-* 'love', 3d person sg. pret. *tatya*, inserts the element
-u-kar before the *i* of form (III); the *i*-form is *tatukari*. One has the
right to assume that this element indicates the resultative force of
the form. The element recurs in *agukar-* 'transfer'[32] and in *pittukar-*
'establish peace',[33] furthermore in the noun *puḫukari* of the Nuzu tab-
lets, which corresponds to Akk. *ḫubullu*[34] 'established loan'. The last
mentioned form goes with an Akk. Pi'el, i.e. the factitive (cf. Old
Ass. *ḫabbulāku* 'I am indebted'), and *pittukar-* recalls Akk. *sulummū*
'peace'; *agukar-* seems to be an equivalent of the causative *šūrubum*
'cause to enter'. Hence *tatukar-* may originally mean 'make loved'
or something similar.

Be this as it may, the following translation of the above quoted
passages seems proper. (English usage makes it necessary to translate
Ḫurr. *pašš-* periphrastically by 'effect an embassy, bring an embassy
on its way'.)

(1) 'when an embassy was effected on the part of my brother', 'when
my brother had brought an embassy on its way'.

(2) '[when] now an embassy on the part of my brother was effected',
'[when] now my brother had brought an embassy on its way'.

(3) 'an embassy on the part of my brother is effected to me', 'my
brother has brought an embassy on its way to me'.

(4) '[. . . . .] an embassy on his part was effected to me',
'[. . . . .] he had brought an embassy on its way to me'.

(5) 'an embassy on my part will be made to my brother', 'I shall
bring an embassy on its way to my brother'.

The following section presents the examples of *i*-sentences found in
the Mitanni letter. A first group (A) comprises those examples which
indicate the origin of the effect which is described by a noun in the
n-form; a second group (B) brings together the examples which indicate
the affected person by the same form.

[32] To the examples Mit. II 58 and N 297.37 (Lewy, Revue des Études Sém.
1938, 68 fn. 8) add now N 636.13 ff. *a-na-ku* ¹*Ḫi-in-zu-ri a-ḫa-ti-ia a-šar* ¹*I-in-ni
a-gu₅-ka₄-ru-um-ma* DÙ-*šu* 'I transferred Ḫinzuri, my sister, to Inni.' In genuine
Akkadian one would expect *ušērib*.

[33] Mit. I 21, III 110. I am inclined to connect *pittu-* with *pe(n)ti* which inter-
changes with the ideogram z a g 'straight, right' in the proper name *Penti-šina*.

[34] *pu-ḫu-ka₄-ra* of N 646.5 is instead of *ana ḫubulli* (HAR- r a) elsewhere (e.g.
N 535.4; 538.9; 540.3; 541.3). The word has nothing to do with *puḫizari* (Orienta-
lia 7.55).

A

(1) with a noun at the beginning:

še-e-ni-iw-wə-en-na-a-an ḫi-il-lu-li-e-wə (IV 45) 'should the information[35] be given on the part of my brother'

(2) with a noun in the second or a later place:

a-ti-i-ni-i-in (93) *še-e-ni-iw-wə-e-en ta-a-du-ka-a-ri-iš šu-ú-ú-ra ḫi-na-ši* (II 92 f.) 'let . . . . love with me be established[36] on the part of my brother'

ú-nu-ú-me-e-ni-i-in za-al-pu-u-[. . . . .] (67) *ta-a-du-ka-a-ri* (II 66 f.) 'in the same way as love is established on the part of . . . . . .[. . . . .]'

[. . . . . .*-na-a-an*] *še-e-ni-iw-wə an-za-a-an-nu-u-ḫu-ši tiš-ša-an* (I 18) '[. . . . .] there was an urgent request (?)[37] on the part of my brother'

(3) with a pronoun attached to the first word of the sentence which is not the verb:

a-nam-mi-it-ta-ma-an še-e-ni-iw-wə-ú-a (63) *gi-pa-a-nu-ul-li-e-wa-a-at-ta-a-an a-ti-i-ni-i-in ma-a-na-na-at-ta-ma-an* (III 62 f.) 'thus are shipments being made on my part . . . .'

a-nam-mi-it-ta-ma-an (65) *ta-a-du-ka-a-ar-ri-e-wə* (III 64 f.) 'in the same way may love be established[38] on my part'

a-nam-mi-til-la-a-an iš-ta-ni-iw-wə-ša (123) *ta-a-du-ka-a-ar-ri-e-wə* (IV 123 f.) 'in the same way may love be established on our part with each other'

ḫé-šal-lu-uḫ-ḫa-a-til-la-a-an ta-a-du-ka-a-ri-iš[39] (IV 121) 'let love be established on our part . . .'

wə-əḫ-ru-uš-til-la-a-an ta-[*a*]*-du-ka-a*<*-ri*>*-iš* (IV 113) '. . .[40] let love be established on our part'

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[35] For the meaning of *ḫill-* see Speiser 311 and cf. Ungnad, Subartu 155.

[36] The rendering of the form in *-iš* by the 3d sg. imper. is based on the assumption that this form is identical with the form in *-a-eš, -i-eš, -i-iš* (after *-ul-*) which is frequent in the Ḫurrian text from Bogazköy. See RHA 35.103 ff. It accords well with this opinion that the imperative also displays elsewhere its special system of suffixes.

[37] See Messerschmidt, Mitanni-Studien 23.

[38] In slight modification of Speiser's view (307 fn. 56) I analyze this form as *tadukar-ul-(i)ewə*. The suffix *-ul-* (meaning still unknown) can be compared with the Urarṭean *-ul-* (Friedrich, Einführung ins Urartäische §23) which is used in an analogous fashion and is likewise unexplained.

[39] The quoted words are probably only the second part of a longer sentence to which also the preceding words, so far incomprehensible, may belong.

[40] For *waḫru-* 'good, beautiful, lucky' see von Brandenstein, Orient. 8.82 ff., where Speiser's (fn. 29) interpretation is anticipated.

in-na-al-la-ma-an (130) [. . . . *-p*]*a-a-duḫ-ḫa ta-a-du-ka-a-ri te-u-u-la-e*
tiš-ša-an (IV 129 f.) 'there, then, is very much love established
on their part [. . . .] . . . . . .'

(4) with a pronoun attached to the second word of the sentence and
the verb following:

a-wə-en-na-ma-an at-ta-a-ar-ti-iw-w[*ə-un-na-a*]*n šu-u-un-na* (79) *ta-a-*
du-ka-a-ru-ši-ik-ki (II 78 f.) 'in the same manner love was estab-
lished on his part because of my fatherly attitude(?)'[41]

(5) with a pronoun attached to the verb which starts the sentence:

pi-sa-an-du-ši-i-it-ta-a-an (IV 9) 'there was joy on my part'

ḫi-il-lu-ši-i-it[*-ta-*]*a*[*-a*]*n* (19) ¹*Ma-ni-e-ta* (II 18 f.) 'there was an
instruction of mine to Mane'[42]

ta-a-du-ka-a-ri-i-til-la-a-an te-u-u-na-e tiš-ša-an tiš-ša-an (III 109)
'there is very much love on our part'

ta-a-du-ka-a-ru-ši-il-la-a-an (10) [. . . . .] (I 9 f.) 'there
was love on their part . . . .'

B

(1) with a noun at the beginning of the sentence:

ti-wa-a-al-la-a-an šur-wə še-e-ni-iw-wə-ta (17) *ka-ti-ik-ki* (IV 16 f.)
'a . . . .[43] communication is made to my brother with regard
to the words (affairs)'

t[*i-wə-*]*e-na-a-an* . . . . (66) . . . . *an-za-a-an-ni*
(II 65 f.) 'a request(?) is made with regard to the word (affair)'

(2) with a noun in a later place:

[. . . . *-*]*an* (4) *šur-wə ti-wə ka-ti-iš* (IV 3 f.) 'let there be a . . .[43] com-
munication with regard to the . . . word (affair)'

ti-ša-a-ma-a-an še-e-ni-iw-wə-ú-e šuk-kán-ni-en (33) *pa-ti ti-wə-e-ni-en*
ḫi-su-ú-ḫu-ši-uw-wə (IV 32 f.) 'there was no anger[44] in the heart
with regard to my brother's . . . word'

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[41] Since Messerschmidt (Mitanni-Studien 23) *attarti* has been translated 'the
one becoming to the father, gift presented to the father (of the bride)' and *elarti*
'the one belonging to the sister'. I have become suspicious of this translation
and seriously consider whether the formation in *-arti* may not represent abstract
nouns like *abūtu* 'fathership' and *aḫūtu* (*aḫatūtu*) 'sistership'.

[42] More literally 'an instruction was made (given) by me to Mane'. The same
verbal form appears in the mutilated passage II 26.

[43] Perhaps 'secret, confidential'. Cf. Korošec, Heth. Staatsverträge 71.

[44] Friedrich (Kl.B. 37) interprets this form as a negated 1st person singular
of form (I). The lack of the noun in *-š* can, of course, be accounted for in this
manner. But, whoever denies the existence of *-man* 'and' has to admit the

[. . . . .]-*a-an ša-a-la-pa-an aš-ti-iw-wə-ú-un-na a-ri* (I 51)
'an act of giving in marriage is performed involving your sister
. . . .'

(3) with a pronoun attached to the first word of the sentence which is not the verb: no example.

(4) with a pronoun attached to the second word of the sentence and the verb following: no example.

(5) with a pronoun attached to the verb which begins the sentence:

ú-ú-ri-uw-wə-un-na-a-an (IV 56) 'there is no reception as far as he is concerned'

ku-zu-u-ši-uw-wə-la-an (IV 46) 'there was no detaining as far as they are concerned'

This interpretation of the verbal form in -*i* implies that the *n*-form of the noun cannot be equated with the 'nominative' as Speiser maintains. As far as the *n*-form in *i*-sentences is concerned, this is obvious. The statement must be extended, however, to all other occurrences of the form, and particularly to those in the *ya*-sentence. Hence, a sentence like *še-e-ni-iw-wə-uš-ša-a-an aš-ti ša-a-ru-u-ša* is most adequately rendered by 'my brother expressed a request with regard to a wife', i.e. 'my brother requested a wife'. In other words, the 'affective' is much closer to our accusative than to anything else.

If the grammatical results obtained by a sharper analysis of form (III) are correct, they must be equally applicable to form (II). It has been pointed out above that both forms are construed alike. Sentences with the verb in -*a*, as those with the verb in -*i*, contain a noun in the *n*-form (which may be replaced by a pronominal suffix), and furthermore, it can be added now, an additional *n*-suffix.

The latter point is particularly obvious in cases like the following:

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existence of a second -*n* suffix in this sentence; it indicates pertinence of the verb to form (II) or (III). Form (III) is in the case under consideration excluded by the fact that corresponding forms of type (I) exist (II 115; III 76, 85, 89, 95). Pertinence to (III) is furthermore confirmed by the existence of *ta-a-nu-ši-uw-wə* (II 13) besides *ta-a-nu-ši-i-wə-al-la-a-an-ni* (IV 10). Because of the *š*-form *še-e-ni-iw-wə-uš* by which it is preceded, the latter certainly belongs to form (I). The peculiar spelling of the former, then, indicates pertinence to a form other than (I) which because of the identity of the stem can only be (III). The argument is to be extended to the other analogous forms which include besides *ku-zu-u-ši-uw-wə-la-an* (IV 46, see below) also *ú-ú-ri-uw-wə-un-na-a-an* (IV 56). The last mentioned form presents some difficulty inasmuch as the *u* after the negative -*uw*- is not easily explained except by some additional hypothesis. It must, however, be emphasized that a 1st person should end everywhere in -*au*.

a-ti-i-ni-i-in ta-še-e-en id-du-u-uš-ta (I 90) '. . . the present is on its
way'

an-du-ú-a-at-ta-a[-*an*] (55) *te-u-u-na-e tiš-ša-an tiš-ša-an pí-su-uš-te-
e-wə ti-ši-iw-wa-an ma-a*[-*na*] (56) *šu-e-ni* (II 54 ff.) 'on account (?)
of that very much joy on my part may arise in my own heart'[45]
In the first example a clear additional -*n* is present in *ati-ni-n* besides
the *n*-form *taše-n*; in the second an -*n* is attached to the pronominal
suffix -(*t*)*ta* of the first person.

If the -*n* marks an impersonal verb when connected with the *i*-form,
it must do so here likewise. This means that the Ḫurrian language
instead of 'he comes' actually says 'there is coming on his part'. In
other words, coming and going are not conceived as actions which a
person performs, but as events which affect the person in question.

It seems to me that the actual occurrences of form (II) are well
understood from this point of view. They may be listed here:
(1) with a noun at the beginning of the sentence:

an-til-la-a-a-an (101) . . . . (102) *še-e-ni-iw-wə*[-*ú-*]*a*
KUR*u-u-mi-i-ni-i-wa-al-la-a-an e-ti-i-ta ḫu-tan-na* (103) *pè-en-ti-en*
(I 100 ff.) 'may it turn out well,[46] as far as these (affairs)
. . . . are concerned, for my brother, with regard
to your country'

u-u-ul-la-a-an KUR*u-u-mi-i-in-na šu-ú-al-la-ma-an* (26) *wi-i-ra-te-e-na-
a-an pa-aš-ši-i-it-ḫé-na*MEŠ *šu-ú-al-la-ma-an tup-pu-la-in* (III 25 f.)
'let the matter of the other countries . . . , of the . . . . ,
(and) of the ambassadors . . . rest'[47]

ḫi-ia-ru-uḫ-ḫé-ma-a-an za-lam-ši šu-u-wə še[-*e-ni-*]*iw-wə* (100) *tup-pu-
li-e-wə a-ti-i-ni-i-in ma-a-an-ni-i-im-ma-ma-an e-e-še-ni-e-ra* (101)
a-a-wə-ru-e-ni-e-ra (III 99 ff.) 'may the golden statue of mine
. . . .[48] persist with heaven (and) with earth'[49]

[*du-ru*]-*pí-iw-wə in-na-a-am-ma-ma-an ú-ru-u-wə-en* (III 116) 'any
plight of mine must not happen'[50]

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[45] With *ti-ši-iw-wa-an ma-a-na šu-e-ni* compare Akkad. *at-tu-ia libbi* E(l)
A(marna) 19.65.

[46] Cf. fn. 33 above.

[47] *tuppi*- adj. 'being in a resting position, established, firm'; cf. Speiser 299
and fn. 39.

[48] I do not enter here into a discussion of the meaning of *manna*. . . . . etc.
(cf. Speiser 303 ff.); it must be reserved for special treatment.

[49] Compare *lu-ú bá-li-iṭ it-ti šamē ù erṣeti* EA 29.59.

[50] It appears that I accept Speiser's translation of the verb (300 f.), but pro-
pose a divergent analysis of the passage (cf. Speiser 314). The preceding sen-
tence (as I divide it) is quoted below as the last example under (2).

(2) with a noun in a later place:

a-ti-i-ni-i-in ta-še-e-en id-du-u-uš-ta (I 90) '.......... the present
is on its way'

ma-a-an-ni-i-ni-i-in ti-wə an-ti ú-na-a-ni-i-in pa-ḫé an-ti (IV 13)[51]

ú-ú-nu-u-uš-ta-ma-a-an [.............] (II 110) '[......] is
coming'

in-na-a-am-ma-ma-an še-e-ni-iw-wə-ú-e (111) *du-ru-pí ú-ru-u-wə-en*
(III 110 f.) 'any plight of my brother must not happen'

tiš-ša-an-na-ma-an ú-ru-uk-k[u-u-u]n (96) [*up?*]-*šu-a-a-ni* KUR*u-u-mi-
i-in-na-ša šu-[ú-]a-ni-a-ša-a-am-ma-ma-an* (II 95 f) 'a very disagree-
able thing (??) happens to the countries ....'[52]

pè-te-eš-ti-e-na-an ni-ḫa-a-a-ri ši-ri-en-na-a-an (III 34) 'let the dowry
be satisfactory,[53] let it be adequate'

ú-ru-li-e-wə-ma-a-ni-i-in gu-ru šu-u-u-wə (116) *du-u-ru[-pí-in]* (III
115 f.) 'should, on the other hand, a plight of mine happen'

e-e-la-ar-ti-iw-wə-ú-e-na-a-še-e-im-ma-ma-an (45) *ni-ḫa-a-ri-a-a-še tup-
pí-aš tup-pu-uk-ku* (III 44) 'tablets[54] concerning the presents[55]
(made in connection) with[56] my *elarti*[57] have been drawn up'

(3) with a pronoun attached to the first word of the sentence which is
not the verb:

i-nu-ú-ut[-ta-a]-ni-i[-in] (61) *ag-gu-tan ni-ḫa-a-ar-ri-e-tan ta-la-me-ni-
e-tan an-šu-u-a-[at-]t[a-a-a]n* (62) *pí-su-uš-ta te-u-na-e tiš-ša-an* (II
60 ff.) 'as very much joy on my part arises from the other, the
dowry[58] (as well as) the .... message'[59]

(4) with the pronoun attached to the second word of the sentence and
the verb following: no example.

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[51] I do not dare as yet to propose a translation of this passage.

[52] The force of the *-kk*-suffix is unexplained so far. A similar occurrence of
ú-ru-uk-ku is found in III 46; but the passage is too obscure as to be profitably
quoted.

[53] So far I have failed to find any reason for the difference between *pè-te-eš-ti-e-
na-an* with only one *n* and *ši-ri-en-na-a-an* with two.

[54] It will be shown in another article that *tup-pí-aš* is a form of the accusative
plural.

[55] The case in *-še* will be demonstrated in another paper to be the genitive
plural.

[56] Adjective of appurtenance in grammatical agreement with *ni-ḫa-a-ri-a-a-še*
and based upon a genitive singular.

[57] See above fn. 41.

[58] *niḫarre-* is from **niḫarne-* < **niḫari-ne-* (see Speiser 307 fn. 56), i.e. *niḫari*
plus the article of the singular.

[59] See LANG. 15.217 fn. 16.

(5) with a pronoun attached to the verb which begins the sentence:

ú-ú-na-a-al-la-a-an še-e-ni-iw-wə-ta (I 115) 'they come[60] to my brother'

ú-na-a-la-an (20) *še-e-ni-iw-wə-ú-a ti-i-ḫa-ⁿⁱnⁱš-ḫa-la-an ip-šu-ši-i-la-an*
(III 19 f.) 'there come valuable (?) shipments for my brother'

it-ta-in-na-a-an pa-aš-ši-i-it-ḫi-iw-wə-ra šu-ka (IV 53) 'let him go[61]
together with my ambassador . . . '

it-ta-i-šal-la-a-an (IV 52) 'let them go'

šu-ra-a-ma-a-a[l-la-a-a]n (5) *tiš-ša-an pè-en-ta* (II 4 f.) 'speedily[62] it
turns out perfectly well for them'

pè-te-eš-te-el-la-a-an za-a[-. . . . .] (II 24) 'it goes in order for
them . . . . '

[pⁱ]-id-du-ka-a-ra-a-la-an (I 21) 'peace prevails among them'

ši-ri-en-na-a-an (III 34) 'may it (the dowry) prove adequate'

ú-ru-uk-ku-un-na-ma-an an-nu-tan šu-e-ni-e-t[a-an] (III 124) 'it hap-
pens[63] . . . . '[64]

In a limited number of passages neither noun nor pronoun is found
with the *a*-form of the verb. It seems that in all these cases a dative-
locative or 'directive' is involved.

*un-du-ma-a-an a-ru-u-ša-ú-ú-un id-du-u-uš-ta-ma-a-an še-e-n[i-
i]w[-wə-ta]* (III 2) 'whereas I gave her,[65] (she[66]) is on her way to
my brother'

ᴷᵁᴿ*u-u-mi-i-ni-iw-wa-aš-ša-a-an* (110) *iš-ta-ni-a-ša pⁱ-id-du-ka-a-ra*
(III 109 f.) 'peace is established for[66] our countries with each
other'

ši-ra-a-an še-e-ni-iw-wə-ú-e-ni-e-en-na ti-ša-a-an-na (III 14) 'it proves
satisfactory to my brother's heart'

še-e-ni-iw-wə<-ú>-e-ni-e (50) *a-a-i-i-e-e pè-te-eš-ta-iš* (IV 49 f.)

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[60] For meaning and construction see Speiser 294 ff. and Goetze, LANG. 15.215 ff.

[61] Goetze, LANG. 15.218 ff.

[62] In Ḫurrian expressed by a verb.

[63] The syntactical structure of this sentence, which may or may not be cor-
rectly divided, is not clear to me (cf. Speiser 315).

[64] The passage II 9 ff. with the probably pertinent forms *ú-ru-u-muš-te-e-wa-
a-tan* and *u-u-lu-u-ḫé-e-wa-a-ti-la-an* has been omitted, since it is still incom-
prehensible.

[65] This pronoun refers to Tušratta's daughter, who is given to the Pharao.
This is particularly clear from the parallel III 11 f.: *un-du-ma-a-an še-e-ni-iw-
wə-ú-e-en aš-ti a-ru-u-ša-ú id-du-uš-ta-ma-a-an* (12) *še-e-ni-iw-wə-ta* 'whereas I
gave my brother's wife, she is on her way to my brother'.

[66] For the force of the suffix *-ša* cf. Speiser fn. 29.

'let there be success for everything (??) in connection with[67] my brother'[68]

The observation that in certain places the *n*-form of the noun seems to be replaced by a 'directive' or a case form of similar connotation is not without significance. It points to a force of the *n*-form which must be comparable to that of the 'directive' in some respect.

In conclusion the results obtained can be summarized as follows:

The form (I) of the Ḫurrian verb (3d person in -*ya*) represents the Tatverbum and must be translated as an active: 3d person 'he (or a specificied person) gives.'

The forms (II) and (III) are impersonal-intransitive. The former indicates an event which affects a person or a thing, while the latter is employed to express the effect of an action of undefined origin upon a person or a thing.

The system at which the investigation arrives—action (I), effect (III), event (II)—is consistent in itself. It might very well be rounded out by the inclusion of the nominal sentence, which quite naturally is descriptive of a state of affairs.

[67] Adjective based on a genitive.
[68] Similar seems III 28 ff., a passage which is, however, not yet translatable. Cf. furthermore III 3, where *šu-e* is not yet clear.

ABLAUT AND ITS FUNCTION IN MUSKOGEE

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[To the final syllable of the roots or radical themes of its verbs Mus-
kogee applies three types of internal modification: quantitative ablaut,
tonal ablaut, and infixation. By means of these processes each verbal
root or theme derives five stems or 'principal parts'. These are dis-
tinguished primarily on the basis of aspectival categories and secondarily
on the basis of tense categories.]

I

Muskogee[1] was the numerically and politically dominant language
of the once powerful Creek Confederacy. Today, after innumerable
vicissitudes (including their virtually forced removal from their ancient
homes in the southeastern section of the United States to that part of
eastern Oklahoma known as the Creek Nation in Indian Territory
days) there are still approximately four thousand Indians who use the
language with varying degrees of fluency. However, most of these are
bilingual and there are few indeed who need rely solely on Muskogee
for purposes of communication. Hence even though the present
number of speakers is considerable, the language is passing into disuse.

Linguistically the Muskogee language is particularly noteworthy for
its luxuriance of grammatical processes. The processes used are word
order, composition, affixation (prefixation, suffixation, and infixation),
reduplication, vocalic (quantitative) ablaut, and tonal ablaut. Com-
paring Sapir's general list of processes[2] with the specific list given for
Muskogee[3] we find that Muskogee employs all of the six main types

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[1] Most of the field work on the Muskogee language was made possible through
two grants (in 1936 and 1937) from the Department of Anthropology, Yale Uni-
versity. The collection of additional materials on Muskogee, particularly his-
torical and ethnological texts, comprised a part of the work done on the history
of the Creek Confederacy under a grant from the Penrose Fund of the American
Philosophical Society in 1938–39.

[2] Edward Sapir, Language, an Introduction to the Study of Speech (New York
1921), 63–4.

[3] The Muskogee grammatical processes are listed in a slightly different order
from that used in Sapir's general list. This is done in order to bring together
the two types of ablaut characteristic of Muskogee.

mentioned by Sapir and a good number of the sub-types mentioned. For example, Muskogee makes use of all three of the sub-types of affixation.   Since Muskogee is a tonal accent language and not a stress language it follows of course that it cannot employ stress differences as a morphological process.   It does, however, employ the similar process of tonal accent changes (called tonal ablaut in this paper), as is shown in more detail later.   Practically the only other process mentioned by Sapir that is not employed in Muskogee is that of consonant doubling.   Although geminate consonant clusters are a conspicuous feature of Muskogee phonology,[4] gemination of consonants is not employed as a grammatical process.   Curiously enough, however, certain other Muskogean languages closely related to Muskogee do employ gemination as a grammatical process.   Thus we find it is only because of an historical accident that Muskogee misses being a language which employs all of the grammatical processes that are compatible with its phonetic structure.

The luxuriance of Muskogee grammatical processes is mentioned here as a point of general interest.   In this paper it will not be possible to discuss all of these processes; to do so would necessitate presenting the whole of Muskogee morphology.

II

Fundamental to a proper understanding of Muskogee morphology is the recognition of the far-reaching use which is made of internal modifications within the roots or radical themes of the verb and its sub-classes.   Of especial interest in this connection are the types of ablaut employed, quantitative and tonal.   But closely associated with ablaut in function, and of equal importance, is another type of internal modification, namely infixation.[5]

It must be noted, however, that contrary to what might be expected in an ablauting language, these modifications are not applied to the radical element of the verb as such, but instead to whatever element stands in the final syllable of the radical theme.   In some cases it is the radical element itself, but in other cases it is a thematic suffix appended to the radical element or even the last of several thematic

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[4] See my paper, Geminate Consonant Clusters in Muskogee, LANG. 14.61–5.

[5] In Muskogee infixation configurates as a type of internal modification.   In its application it is therefore more closely related to the two types of ablaut than it is to the processes of prefixation and suffixation.

suffixes. For example, inasmuch as the incompletive stem is ordinarily derived from the root or radical theme by the process of vowel lengthening, the incompletive stem of the non-thematized root *nis-*[6] 'to buy it' will be *ni·s-*, but the incompletive stem of the radical theme *nisak-* 'several (distributively) to buy it' will be *nisa·k-*.

The processes of ablaut and infixation, then, are applicable to the final syllable of a non-thematized root; otherwise, they are applicable to the final syllable of the radical theme. In either case the processes are used to convert the root or theme into its fundamental stems. Each root or theme has five of these stems, which constitute the 'principal parts' of the Muskogee verb. Some stems are formed by means of a quantitative change, some by means of a quantitative change plus a tonal change, others by means of an infix plus a tonal change, and still others by means of all three. Thus it becomes necessary to consider all of these processes at one and the same time. For example, the root *nis-* 'to buy it' and its corresponding distributive theme *nisak-* 'several (distributively) to buy it' have the following stems:

Singular	Distributive	Type of Modification
I. *nis-*	*nisak-*	zero change
II. *nǐhs-*	*nisáhk-*	infixation; high tonal accent
III. *nǐ·s-*	*nisâ·k-*	vowel-lengthening; falling tonal accent
IV. *ni·s-*	*nisa·k-*	vowel-lengthening
V. *nǐ·ns-*	*nisǎ·nk-*	vowel-lengthening; infixation; rising tonal accent

It should be pointed out that the distributive theme *nisak-* is derived from the root *nis-* plus the distributive thematic suffix *-ak-*. Note also that the stems which are marked as having a specific tonal accent (II, III, and V) are those whose tonal accent is inherent. The remaining stems (I and IV) have no inherent tonal accent, but inasmuch as all polysyllabic words have at least one tonal accent, such stems may, under certain circumstances, receive a tonal accent.

Every non-thematized verbal root and every verbal theme of Muskogee must undergo the internal modifications illustrated in the table given above. The rules for the application of these modifications are based entirely on phonological considerations and are perfectly regular throughout. With the exception of Stem II, all roots and themes form

[6] A summary of Muskogee phonemes is presented in the concluding paragraphs of this paper.

their stems in a manner quite analogous to the formation of the stems presented in the table. Omitting Stem II for the present, we have the following rules for the formation of the other stems:

Stem I is always identical with the root or radical theme, for example,

nisíta 'to buy it' (root *nis-*)

nisakitá 'several (distributively) to buy it' (theme *nisak-*)

fo·yitá 'to saw it' (root *fo·y-*)

fo·yakíta 'several (distributively) to saw it' (theme *fo·yak-*)

nafkitá 'to hit it' (root *nafk-*)

laffitá 'to cut it up' (root *laff-*)

keycitá 'to tell' (root *keyc-*)

fikhonnitá 'to quit' (root *fikhonn-*)

Stems III, IV, and V are characterized by vowel-lengthening except when a vowel is followed by a sonorant (*y, w, m, n, ŋ,* or *l*) in the same syllable. If the vowel is already long in the root- or theme-form it remains unaltered.

Stem III is differentiated from the other lengthened stems by having a falling tonal accent, for example,

nî·simác 'he bought it'[7] (stem *nî·s-* < root *nis-*)

nisâ·kimác 'they bought it' (stem *nisâ·k-* < theme *nisak-*)

fô·yimác 'he sawed it' (stem *fô·y-* < root *fo·y-*)

fo·yâ·kimác 'they sawed it' (stem *fo·yâ·k-* < theme *fo·yak-*)

nâ·fkimác 'he hit it' (stem *nâ·fk* < root *nafk-*)

lâ·ffimác 'he cut it up' (stem *lâ·ff-* < root *laff-*)

kêycimác 'he told' (stem *kêyc-* < root *keyc-*)[8]

fikhônnimác 'he quit' (stem *fikhônn-* < *fikhonn-*)

Stem IV is characterized by vowel-lengthening but has no inherent tonal accent though, as has already been mentioned, it may, under certain circumstances, receive a tonal accent. Examples:

ni·sís 'he is buying it' (stem *ni·s-* < root *nis-*)

nisa·kís 'they are buying it' (stem *nisa·k-* < theme *nisak-*)

fo·yís 'he is sawing it' (stem *fo·y-* < root *fo·y-*)[9]

fó·ya·kís 'they are sawing it' (stem *fo·ya·k-* < theme *fo·yak-*)

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[7] Specifically, 'he bought it (about a year or so ago).' There are four past tenses in Muskogee, viz., (1) today or last night, (2) from yesterday back to several days or weeks ago, (3) several weeks ago back to a year or so ago, and (4) a long time ago, at least several years ago. The example quoted here belongs to the third past tense; the same is true of the next seven examples.

[8] Note the absence of vowel-lengthening in this example.

[9] In the case of a root or theme having a long vowel in its final syllable no distinction can be made between Stem I and Stem IV.

na·fkis 'he is hitting it' (stem *na·fk-* < root *nafk-*)

la·ffis 'he is cutting it up' (stem *la·ff-* < root *laff-*)

keycis 'he is telling' (stem *keyc-* < root *keyc-*)[10]

fikhonnis 'he is quitting' (stem *fikhonn-* < root *fikhonn-*)

Stem V not only is characterized by vowel-lengthening but has in addition an inherent rising tonal accent and an infixed *-n-*. The infix is placed immediately after the vowel or, in the case of a vowel followed by a sonorant in the same syllable, immediately after the sonorant. Examples:

nĭ·nseys 'he kept buying it' (stem *nĭ·ns-* < root *nis-*)

nisă·nkeys 'they kept buying it' (stem *nisă·nk-* < theme *nisak-*)

fŏ·nyeys 'he kept sawing it' (stem *fŏ·ny-* < root *fo·y-*)

fo·yă·nkeys 'they kept sawing it' (stem *fo·yă·nk-* < theme *fo·yak-*)

nă·nfkeys 'he kept hitting it' (stem *nă·nfk-* < root *nafk-*)

lă·nffeys 'he kept cutting it up' (stem *lă·nff-* < root *laff-*)

kĕynceys 'he kept telling' (stem *kĕync-* < root *keyc-*)

fikhŏnnneys 'he kept quitting'[11] (stem *fikhŏnnn-* < root *fikhonn-*)

Proceeding now to the rules for the formation of Stem II, we find that they are somewhat more complex. They are perfectly regular, however, and the complexities arise from the fact that different rules apply to different types of root- or theme-finals.

If the root- or theme-final is a short vowel plus a single consonant, or a vowel plus *y* plus another consonant (except when this other consonant is another *y*), the infix *-h-* is inserted immediately before the consonantic final. Moreover, when Stem II is constructed by means of the infix *-h-*, it always has the high tonal accent. Examples:

níhsis 'he bought it'[12] (stem *níhs-* < root *nis-*)

nisáhkis 'they bought it' (stem *nisáhk-* < theme *nisak-*)

fo·yáhkis 'they sawed it' (stem *fo·yáhk-* < theme *fo·yak-*)

kéyhcis 'he told' (stem *kéyhc-* < root *keyc-*)

If the vowel of the root- or theme-final syllable is long the *-h-* is inserted (under the same circumstances) with consequent shortening of the vowel, thus:

[10] Likewise in the case of a root or theme having a short vowel followed by a sonorant in the same syllable, no distinction can be made between Stem I and Stem IV. The next example also illustrates this phenomenon.

[11] The triple *n* in this example is correct. Roots and themes ending in a geminated *n* insert the infix *-n-* in forming Stem V just as all other roots and themes do.

[12] This example illustrates the first past tense; the same is true of the following fourteen examples.

fóhyis 'he sawed it' (stem *fóhy-* < root *fo·y-*)

wáhłis 'he cut it off' (stem *wáhł-* < root *wa·ł-*)

íhhis 'he hid it' (stem *íhh-* < root *i·h-*)

If the root- or theme-final ends in a triple consonant cluster, in a non-geminate double cluster, or in the geminate cluster *kk*, the infix *-êy-*, having an inherent falling tonal accent, is inserted between the last two consonants, thus:

hayhêykis 'he groaned' (stem *hayhêyk-* < root *hayhk-*)

nafêykis 'he hit it' (stem *nafêyk-* < root *nafk-*)

homêypis 'he ate' (stem *homêyp-* < root *homp-*)

ta·kêykis 'he kicked' (stem *ta·kêyk-* < root *ta·kk-*)

If the root- or theme-final ends in a geminate cluster other than *kk*, the infix *-êy-* is inserted between the geminates with the consequent assimilation of the second geminate to *y*, thus:

lafêyyis 'he cut it up' (stem *lafêyy-* < root *laff-*)

fikhonêyyis 'he quit' (stem *fikhonêyy-* < root *fikhonn-*)

kołêyyis 'he dug' (stem *kołêyy-* < root *kołł-*)

linta·pêyyis 'he stumbled' (stem *linta·pêyy-* < root *linta·pp-*)

opayêyyis 'he twisted it' (stem *opayêyy-* < root *opayy-*)

This concludes the phonological rules for the formation of the five stem-types. It will now be of interest to consider briefly some of their more important functions. We find that the five stems may be grouped into three aspect-classes, as follows:

Completive	Incompletive	Continuative or Intensive
I. *nis-*	IV. *ni·s-*	V. *nĭ·ns-*
II. *níhs-*		
III. *nî·s-*		

It will be noted that three different stem-types fall within the range of the completive aspect. These seem to be differentiated chiefly on considerations of tense but other notions are also included. Thus *nis-* (I) is used as a tenseless stem (e.g., in infinitive forms) but also in the completive future and with certain negative and other modal suffixes; *níhs-* (II) is the stem used for the immediate past tense but is also required by certain modal suffixes; *ni·s-* (III) is the stem used by the three remote past tenses (in the completive aspect) but also for the immutable durative aspect. Further analysis of the language will probably reveal still other uses for these three stem-types.

The stems of all verbs are conveniently arranged in the following order, according to their basic notional significance: I, tenseless completive; II, immediate past tense completive; III, remote past tense completive; IV, incompletive (in all tenses); V, continuative or intensive (in all tenses). The following examples of actual words built on the various stems will serve to illustrate more clearly their underlying significance:

Stem I:

nisíta 'to buy it'
nisáli·s 'he will buy it'
nisíká·ti·s 'he didn't buy it'
nisô·f 'when he buys it'

Stem II:

níhsis 'he bought it (today)'
nafêykis 'he hit it (today)'
kolêyyis 'he dug (today)'
níhsi·s 'he might buy it'

Stem III:

ní·sáŋks 'he bought it (recently, but not today)'[13]
ní·simác 'he bought it (about a year or so ago)'
ní·sántas 'he bought it (long ago)'

Stem IV:

ni·sís 'he is buying it'
ni·sêys 'he was buying it (today)'
ni·sáŋks 'he was buying it (recently)'
ni·simác 'he was buying it (about a year ago)'
ni·sántas 'he was buying it (long ago)'
ni·salí·s 'he will be buying it'

Stem V:

ní·nseys 'he kept buying it (today)'
ní·nsáŋks 'he kept buying it (recently)'

Note particularly the following sets of words which are inflected alike but are built on different stems:

   (1) *lêykis* 'he is seated' (completive and immutable durative; III)
     leykis 'he is in the act of sitting down' (incompletive; IV)
   (2) *níhsis* 'he bought it (today)' (completive; II)
     ni·sís 'he is buying it' (incompletive; IV)

[13] This example illustrates the second past tense. The immediately following example is in the third past tense, the example following it in the fourth past tense.

(3) *ni·sáŋks* 'he bought it (recently)' (completive; III)
   ni·sáŋks 'he was buying it (recently)' (incompletive; IV)
   nĭ·nsáŋks 'he kept buying it (recently)' (continuative; V)
(4) *ni·simác* 'he bought it (a year ago)' (completive; III)
   ni·simác 'he was buying it (a year ago)' (incompletive; IV)
   nĭ·nsimác 'he kept buying it (a year ago)' (continuative; V)
(5) *ni·sántas* 'he bought it (long ago)' (completive; III)
   ni·sántas 'he was buying it (long ago)' (incompletive; IV)
   nĭ·nsántas 'he kept buying it (long ago)' (continuative; V)
(6) *nisáti·s* 'he will buy it' (completive; I)
   ni·sati·s 'he will be buying it' (incompletive; IV)
   nĭ·nsati·s 'he will keep buying it' (continuative; V)

Interestingly enough, numerals are also treated as verbs in Muskogee and various numeric derivatives are built up on the various types of verbal stems just as all other verbs are. Note the following examples:

Stem I:
   hokkolíta 'to get to be two'
   hókkola 'twice'

Stem II:
   hokkóhlis 'they got to be two'

Stem III:
   hokkô·lin 'two (in counting)'
   hokkô·liya·t 'two of us'

Stem IV:
   hokkó·la 'both'

Stem V:
   hokkŏ·nla 'both together'; this form has an intensive significance in contrast to *hokkó·la* given immediately above.

This illustrates briefly the semantic range of usage for the various stems of the verb. Internal modifications are also applied to the final syllables of the roots and radical themes of adjectives, but the latter are in reality a sub-class of the verb, being past participles in form. Some have, however, become petrified in this form, e.g., *holá·tti·* 'blue' (Stem I: *hola·tt-*). The intensive significance of Stem V, mentioned above, can best be illustrated in an adjectival form, such as *holă·nttosi·* 'deep blue, true blue'.

III

An interesting problem for future investigation will be to trace the historical development of the various stem-types of Muskogee, for all of the Muskogean languages make some use of various processes of

internal modification to build up verb stems which are semantically differentiated as to aspect or mode or both. Hence at least some of the processes described in this paper must have already been fairly well developed within Primitive Muskogean. Furthermore, there is some evidence that qualitative vocalic ablaut may also have been a feature of the primitive language, even though it is not a live process in any of the dialects. Note the following cognates:

KOASATI	CHOCTAW[14]	MUSKOGEE
misi·li 'to close the eyes'	*močo·li*	*moso·l-itá*
taktahka 'to cluck'	*toktoha*	*to·kto·k-itá*
kaca·li 'to bite'	*kisi·li*	*kici·t-k-itá*

SUMMARY OF MUSKOGEE PHONEMES

The vowels of Muskogee are *i, e, a, o*. Of these, *i, a, o* may occur freely in all positions and may, in addition, be accompanied by the syllabic phoneme of length. When not accompanied by the length phoneme, *i* is [ɪ], *a* is [ʌ], *o* is [ʊ]. When accompanied by the length phoneme, the vowels are lengthened and their qualities undergo a change. Thus *i·* is [i·], *a·* is [a·], *o·* is [o·]. The vowel *e* is a defective phoneme which may occur only before *y* in the same syllable (e.g., *leykitá* 'to sit') and which may never be accompanied by the length phoneme. In Muskogee *e* plus *y* is roughly comparable to the diphthongal sound in Eng. *late* (though the diphthongal glide is much more prominent in Muskogee). It should be noted that Muskogee *e* has arisen through the 'umlauting' of Muskogee *a* when it occurs before *y* in the same syllable. In some dialects *a* has not been umlauted and some speakers will therefore say *laykitá* instead of *leykitá*. Because of dialectic mixture, most speakers use both *a* and *e* before *y* in the same syllable, as in *hayhêykis* 'he groaned.' Were it not for this fact, it would be unnecessary to set up the phoneme *e*.

The consonants of Muskogee are *y, w, p, f, m, t, n, ɬ, l, c, s, k, h*, and the defective phoneme -*ŋ*-.

The stops *p, t, k* and the affricate *c* are voiceless lenes. In word-initial and syllable-final position they are slightly aspirated; in other positions they are unaspirated.

The fricatives *f, ɬ,* and *s* are usually fortes in all positions. Among older speakers, however, they are lenes in intervocalic position. The sound *f*, which has the bilabial position among older speakers, usually has the labio-dental position among younger speakers, particularly among bilinguals whose pronunciation has undoubtedly been influenced by English. The sound *h* is usually an aspirate but in syllable-final position it approaches [x].

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[14] The Choctaw examples are quoted from Cyrus Byington, A Dictionary of the Choctaw Language (Bulletin, Bureau of American Ethnology, 46; Washington 1915). Certain transliterations have been introduced in order that the orthographical system used in Choctaw might be consistent with that used in the other Muskogean languages.

The Koasati and Muskogee words are taken from my own field notes on these languages.

The semivowels *y* and *w*, the nasal *m* and the liquid *l* require no special comment. The alveolar nasal *n* is comparable to the corresponding English phoneme except when it occurs after a long vowel; in this position it is actualized as nasalization of the preceding vowel, e.g., *hĭ·nli·* 'good', *holă·nttosi·* 'deep blue'. The mid-palatal nasal *-ŋ-*[15] is a defective phoneme occurring only before *k*. Historically speaking, it arises from *m*, but because of dialectic mixture we find that most speakers now use all three nasals (*m*, *n*, and *-ŋ-*) before *k*, e.g., *tamkitá* 'to fly', *opánka* 'a dance', and *ahaŋkatíta* 'to count'.

In addition there are three phonemes of tonal accent which determine not only the tonal configurations of accented syllables but also those of the surrounding unaccented syllables. The three tonal accents are the high, symbolized by an acute sign (') over the vowel of the accented syllable; the rising, symbolized by an inverted circumflex (ˇ); and the falling, symbolized by a circumflex (^). The tonal configurations of the accented syllables are described by the terms 'high,' 'rising', and 'falling'. All unaccented syllables which follow an accented syllable are low in pitch, e.g., *lá·ni·* 'yellow', *hĭ·nli·* 'good', *ánlawa* 'wilderness'. All unaccented syllables which precede an accented syllable are high in pitch with the sole exception of a word-initial open syllable containing a short vowel; the latter type of syllable is low. Thus in the words *alpatá* 'alligator', *hoktĭ·* 'woman', and *fikhonêyyis* 'he quit', all of the syllables preceding the accented syllable are high; in the words *nafêykis* 'he hit it', *wanayitá* 'to tie it', and *itipoyíta* 'to fight', the pitch of the initial syllable is low, since it is open and contains a short vowel.

All polysyllabic (non-monosyllabic) words must have at least one tonal accent. A great many words have several accented syllables, e.g., *sâ·sákwa* 'goose', *nĭ·síckali·s* 'you will be buying it', *fikhonnís* 'he is quitting', *wanâ·yíckáŋks* 'you tied it'.[16] In this event the tonal level of each succeeding accented syllable will be slightly lower than that of the preceding accented syllable. Thus the pitch of the syllable *-síc-* in *nĭ·síckali·s* is slightly lower than the pitch of the syllable *nĭ·s-* but not nearly so low as the pitch of the last two syllables. Moreover, unaccented syllables coming between two accented syllables accommodate their pitch to that of the second accented syllable. Thus the unaccented syllable *-hon-* in *fikhonnís* has the same pitch as the last accented syllable *-nís*, which by definition has a slightly lower pitch than that of the first accented syllable *fik-*.[17]

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[15] This phoneme is not listed in my paper cited in note 4. At that time it was erroneously believed to be a variant of *n*. Since *-ŋ-* occurs only before *k*, it cannot be geminated.

[16] Note that the tonal accents may occur on initial, medial, or final syllables and also on consecutive syllables. These phenomena arise from the fact that a number of Muskogee suffixes have an inherent tonal accent which must be preserved no matter how many other accented syllables may occur in the same word.

[17] This discussion of Muskogee 'tonemes' supersedes the brief remarks made in my previous paper (LANG. 14.63) pertaining to the same subject.

To present all of the complexities involved in the Muskogee tonemic system would require us to go into considerably more detail than space permits in this discussion. It is hoped that a special paper on Muskogee tonemics may be presented in the near future.

MISCELLANEA

SANSKRIT *coráyati*, HUNGARIAN *csór-*

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The Hungarian word *csór-* 'steal' of humorous connotation agrees in form and meaning with the Sanskrit verb *coráyati* 'steal', belonging to the so-called tenth or *cur* class of Hindu grammarians. Since the possibility of borrowing from Sanskrit into Hungarian may be ruled out at once, and since the word is too late in Hungarian to be of Iranian origin, it must be treated as a Gypsy loanword.[1] The root *csór-* exists in the dialect of the Hungarian Gypsies and occurs in the forms *csór-*, *csórél* 'steal', *csóripé, csórdánoj* 'loot', *csóripé* 'thievery'.[2] The sobriquets *csóri, csóré* are used in Hungarian vulgar speech and sometimes in literature to denote a Gypsy. The Gypsy hero of János Arany's mock-heroic epic A nagyidai cigányok ('The Gypsies of Nagyida'), written in 1852, is called *Csóri*.

Gypsy loanwords are extremely rare in Hungarian and consequently no general rules for the behavior of Gypsy sounds in Hungarian can be established. On the other hand, the dialect of the Hungarian Gypsies teems with Hungarian loanwords, and on the basis of these borrowings it is possible to state that the palatal affricate *cs* [tʃ] of Hungarian has the same value as the corresponding sound of Hungarian Gypsy. Thus, the following Hungarian Gypsy words with initial *cs* [tʃ] are borrowed from Hungarian: Hung. Gp. *te csavarinen* 'to wind, screw' < Hung. *csavarni*; Hung. Gp. *csak* 'only' < Hung. *csak*; Hung. Gp. *csekélyno* 'few, little' < Hung. *csekély*; Hung. Gp. *te csufolinen* 'to mock' < Hung. *csufolni*; Hung. Gp. *te csudinen* 'to wonder, admire' < Hung. *csudálni*; Hung. Gp. *te csuklinen* 'to hiccup' < Hung. *csuklani*.[3]

Since the word *csór-* is found with the same denotation and in almost identical forms in both Hungarian and Hungarian Gypsy, there are two possibilities to be considered: (1) the word is borrowed from Hungarian into Hungarian Gypsy, or (2) it is borrowed from Hungarian

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[1] Cf. Magyar Etymologiai Szótár 7.1151.

[2] F. Sztojka, Magyar és Cigány Nyelv Gyökszótára (Uszód 1886) 94[1].

[3] E. Györffy, Magyar és Cigány Szótár (Paks 1885) 19–22.

151

Gypsy into Hungarian. The first of these alternatives may be discounted inasmuch as no etymology can be found on the Hungarian side; the second must be accepted in view of the fact that the root *csór-* exists in the meaning 'steal' not only in the dialect of the Hungarian Gypsies but also in many other widely separated Gypsy dialects.

In the dialect of the Turkish Gypsies the infinitive *choráva* or *choláva* means 'to steal';[4] *tchordel* 'you steal', *tchorél* 'he steals'.[5] The words *chor, chorno, churno* have the meaning 'thief', and the participle *chordikanó* denotes 'stolen'. (*Kon chorgiales?* 'Who stole it?'; *astarghióme chorés* 'I have taken the thief'.)[6]

In Roumanian Gypsy the following forms are found: *c'orao, -os, -rdim* 'je vole', *c'oro* 'voleur', *c'ordas'* 'vol', *c'ordo* 'volé'.[7]

In one dictionary of Spanish Gypsy the word *choro* 'thief, thievish, evil; ladrón, malo' appears with a reference to the Hungarian Gypsy *tschor* (sic) 'thief'.[8] In another dictionary of Spanish Gypsy the word *chorar* is given with the meaning '*robar, hurtar*'.[9]

The same root is found also in the dialect of the English Gypsies in the forms *chore* 'to steal', *chore* 'thief', *chories* 'thieves', *chor-dudee-mengri* 'thieves' lantern, dark lantern'.[10]

In Norwegian Gypsy the word *cor* or *chor* means 'thief'.[11]

To this it may be added that in the summer of 1939, while traveling in Finnish Lapland, the writer encountered a wandering tribe of Finnish Gypsies near the Lappish village of Vuotso, about two hundred kilometers above the Arctic Circle, and upon inquiry found that in their dialect the word *ts'ōr* is used with the meaning 'to steal', and that the word *ts'ōribosk'irō* denotes 'thief'.

Thus, the presence of the root *csór-* (*chor, c'or, tschor, ts'ōr*) with identical meaning in the dialects of the Turkish, Roumanian, Spanish, English, Norwegian, Finnish, and Hungarian Gypsies leaves no doubt

[4] A. G. Paspati, Memoir on the Language of the Gypsies as now used in the Turkish Empire, JAOS (1862) 7.217-8.

[5] J.-A. Vaillant, Grammaire, Dialogues et Vocabulaire de la Langue Rommane des Sigans (Paris 1861) 369.

[6] Paspati 7.217-8.

[7] Vaillant 101.

[8] G. Borrow, The Zincali; or, An Account of the Gypsies of Spain; with . . . a copious Dictionary of their Language (London 1841) 2.122.

[9] D. A. Jimenez, Vocabulario del Dialecto Jitano (Sevilla 1846) 56, 79.

[10] G. Borrow, Romano Lavo-Lil: Word-Book of Romany; or, English Gypsy Language (London 1874) 32.

[11] J. C. Sundberg, Sanskrit Words in the Vocabulary of Norwegian Gypsies, JAOS (1902) 23.362.

that we are dealing with an indigenous Gypsy root and not with a Hungarian loanword in the dialect of the Hungarian Gypsies. Since it has been demonstrated that the initial palatal surd *c* of Sanskrit corresponds to the initial palatal tenuis *ch* [tʃ] of Gypsy,[12] as shown by the examples Skr. *car* 'move, go, wander, graze' : Gypsy *charáva* 'graze', Skr. *cuṣ* 'suck' : Gypsy *chuché* 'breast', Skr. *cumb* 'kiss' : Gypsy *chumi* 'kiss', it appears certain that Gypsy *chor* (*csór-, c'or, tschor, ts'ōr*) is identical with the Skr. root *cur* and that the Hungarian word *csór-* 'steal' is of ultimate Sanskrit origin, having been borrowed into Hungarian from the Indo-Iranian language spoken by the Hungarian Gypsies.[13]

THE OLD AND MIDDLE IRISH VERB *do·coisig*

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[The OIr. and MIr. verb *do·coisig*, glossed by Lewis and Pedersen on the basis of three occurrences as 'preserves, supports', appears from the evidence of two other recently discovered occurrences to mean, rather, 'guards, protects'. The etymology is uncertain and therefore no clue to the meaning.]

Lewis and Pedersen[1] define *do·coisig* by 'preserves, supports' on the basis of the three examples of this verb which were at that time known to them, but since the publication of their work, two other instances have been found which suggest a somewhat different interpretation.

In the first of these passages in the Echtra Nerai,[2] the question is asked why the lame man and the blind man visit the well, and the answer is that they do so on account of the *mionn n-oir bis for cionn ind rig. Iss ann do·coisigar*, 'a diadem of gold which the king wears on his head. It is there it is kept'. Although 'is kept' makes good sense as a translation of *do·coisigar*, it hardly brings out the full force of the meaning; for from the ensuing lines of this tale it is clearly evident that the lame man and the blind man, who had been purposely mutilated to avoid the risk of theft, were the custodians of the diadem.

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[12] Paspati 7.233.

[13] [The wide diffusion of the Gypsy word *čor* 'thief' is further exemplified by its presence in the Neapolitan jargon of the Camorra in the form *ciori* 'esecutori d'un furto': cf. U. Pellis, AGl. 22–3.568 (1929); P. S. Pasquali, JGLS 3.14.46 (1934); M. L. Wagner, VR 1.281 (1936). Wagner further cites the forms *cior* 'ladro' and *ciuribè* 'furto semplice', the latter with the derivational suffix *-ipé(n)*, *-ibé(n)*.—Robert A. Hall Jr.]

[1] Concise Comp. Celtic Gramm. 391.

[2] Ed. K. Meyer, Revue Celtique 10.218, §§7, 8.

Since an object of such value as to require a special guard would not
be simply 'kept' at the well, it seems reasonable to suppose that *do·coisi-
gar* should here rather be rendered by 'is protected' or 'is guarded', for,
otherwise, the presence of the guardians loses all import.

That *do·coisig* really seems to signify 'protects' or 'guards' is sup-
ported by another passage which is not cited by Lewis and Pedersen.
In the Cáin Domnaig,[3] there occurs a list of the daily occupations which
may not be performed on Sunday lest the sanctity of the Sabbath be
violated, but among the things which are permitted is *becc ara·bi do
uidi do neuch di·toet do cein aidc[h]i ndomnaig co·roa tegdois dod·coise*,[4]
'the little that there remains of a journey to anyone who comes from
afar on Saturday night until he attain a house that may protect him'.
Here neither of the two meanings given by Lewis and Pedersen quite
reflects the precise sense of the verb.   At least, there can be little doubt
that the house does not 'support' the traveller, and even if *dod·coise*
is rendered by 'that may preserve him', the full connotation has still
not been brought out, for beset as he is at nightfall by the many perils
which lurk along the way, the voyager obviously seeks the protection
of those who dwell in the house where he takes refuge.   He is, there-
fore, 'protected' rather than 'preserved' by the house and its occupants,
just as in the previous passage the diadem was not simply 'kept' by
the two custodians, but was actually 'guarded'.

If, therefore, *do·coisig* signifies 'guards' or 'protects' in the two pre-
ceding cases, it may be asked whether the same meaning does not also
reside in the three instances of this verb quoted by Lewis and Pedersen.
Certainly the first of these passages, which occurs in O'Davoren's Glos-
sary,[5] offers no difficulty, for *to·coisigh Torach minn oir* may be trans-
lated by 'Torach guards a diadem of gold' without doing any violence
to the sense.   Indeed, this translation is made all the more probable
by the fact that here, as in the case of the quotation from the Echtra
Nerai, the object of the verb is again a diadem of gold.   O'Davoren,
whose main entry is spelled *tocoiscid*, glosses it by *taiscid*, 'the act of
storing up or hoarding', but the explanations given by the Irish glossa-
tors, insofar as they are not mere guesses, often are of an etymological

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[3] Ed. J. G. O'Keeffe, Anecdota from Irish Manuscripts 3.21.

[4] One expects *dod·cosa*, if *do·coisig* is correctly derived from *to-com-saig-*, but
the slender *s* may be due to the analogy of such palatal subjunctive forms as
·cuintea '(he) may seek' from *cun-di-śa*.   At all events, *dod·coise* would represent
an earlier *dod·coisea*, for in accordance with later practice a final unstressed *a*
in such a position was lost.

[5] Ed. W. Stokes, Archiv für Celtische Lexikographie 2.476, §1563.

nature and are by no means always intended to be exact definitions of the lemmata. Hence despite O'Davoren's gloss, there exists no valid reason for offering an interpretation different to that which was made in the Echtra Nerai, for in both passages 'guards' seems to be the most satisfactory rendering.

As *do·coisig* has twice been found in collocation with a diadem of gold, it is not surprising that it should also be used with reference to a draught-board.[6] At all events, the draughtboards of ancient Ireland with their jewelled ornamentation and their many pieces fashioned of precious metals must have possessed a value which in no way was less than that of the diadems. Such a draughtboard Fothad bequeathes to Ailill's wife, and after minutely describing it in the Reicne Fothaid Canainne,[7] he adds: *ma dus·coisis . . . ni bo cres nach cinel duit.* No doubt influenced by O'Davoren's gloss, Meyer translated this sentence by 'if thou hoard it . . . no race of thine will be in want'. But *dus·coisis* may equally well be rendered by 'if thou guard it', which not only furnishes good sense, but also obviates the necessity of assuming that the verb here has a different meaning.

In the Würzburg glosses *do·coisig* likewise occurs. Unfortunately, however, the precise interpretation of the passage in which it is found is hard to establish. Even though the lemma is perfectly clear, the gloss is ambiguous, because it is by no means certain just exactly what the Irish glossator intended by his explanation. There can at least be no doubt that *manibus nostris* in I Corinthians IV, 12 means 'with our hands', but the Irish gloss *torad a láam is hed dod·coisged* is not so clear. The editors of the Thesaurus Palaeohibernicus[8] render this phrase by 'it is (the) fruit of his hands that used to support him', and from them Lewis and Pedersen have taken the meaning of 'support' for *do·coisig*. Whatever may be the correct translation of *dod·coisged* in the foregoing passage, it can hardly signify 'that used to support him', for the verb which is continually employed in that sense in the glosses is *fo·loing*. Since in the four preceding occurrences *do·coisig* apparently means 'guards' or 'protects', *dod·coisged* may perhaps here be rendered by 'that used to protect him'. Whether that is the precise sense which the glossator had in mind cannot be ascertained, but it is at least supported by the evidence that has so far been presented.

Often the etymon of a word assists in determining its semantic

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[6] The Irish word is *fidchell*, but whether it is exactly equivalent to the English 'draughtboard' remains uncertain.

[7] Ed. K. Meyer, Fianaigecht 16, §40.

[8] 1.550, 1.21.

development. But etymological considerations could hardly have influenced Lewis and Pedersen to assign the meaning of 'preserves' or 'supports' to this verb, for the etymology which they propose raises difficulties. If their derivation of *do·coisig* from *to-com-saig-* is correct, the presence of the root *saig-* presupposes that the medial *s* should be broad and not slender in the third person singular of the present indicative, so that one would expect *do·cos(s)aig* with a non-palatal *s*. The root may, therefore, be *sech-*, 'to say', but a serious objection can be made against this identification on the score that none of the derivatives of *sech-* bear any semasiological resemblance to *do·coisig*, whereas some of the compounds of *saig-*, 'to make for, to attain', such as **do·osaig*, 'stores up, hoards' at least suggest the possibility of semantic connection. In view of this difficulty, it seems safer to assume that the slender *s* in *do·coisig* was caused by the operation of analogy. As Pedersen has already indicated,[9] the model was probably *said-*, *sed-*, 'to sit', but doubtless *sech-* also played a role, since the derivatives of this root were once all strong verbs, as is shown by the fact that *in·coisig* 'indicates' forms an *s*-subjunctive and future.[10] If the analogical influence of *said-*, *sed-*, and *sech-*, therefore, accounts for the slender *s* in *do·coisig*, it is also possible that the preverbs were not simply *to-* and *com-*, but that a third preverb, namely *oss-* or *uss-*, once immediately preceded the root *saig-*. Hence, the correct analysis of *do·coisig* may be *to-com-oss-saig-*.[11]

As it is questionable whether *do·coisig* contains the preverb *oss-* or *uss-* and as the root itself has also not been definitely determined, the meaning of this verb can only be established by a careful examination of the passages in which it occurs without regard to its possible derivation. The etymology proposed by Lewis and Pedersen may, therefore, be sound, but at least their translation is open to doubt. For on the basis of the foregoing discussion, they should rather have rendered *do·coisig* by 'guards' or 'protects' than by 'preserves' or 'supports'. It should, however, be remembered that this suggested change in the interpretation is based on only five recorded occurrences of the verb

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[9] Vergleichende Grammatik der keltischen Sprachen 2.610, 611.

[10] With the *s*-subjunctive second singular *dus·coisis* in the Reicne Fothaid Canainne compare, for instance, the *s*-future second singular *in·coisis* 'you will indicate' in R. Thurneysen, Die Bürgschaft im irischen Recht 28, §76 b.

[11] The preverb *oss-*, *uss-* is likewise found in another compound of *saig-*, namely, **do·osaig*, 'stores up, hoards', and its abstract *taiscid* was used in the quotation from O'Davoren to gloss *to·coisigh* (*tocoiscid*).

and that in one of these instances the precise sense is very uncertain. More evidence is, consequently, required before it may be said with finality that *do·coisig* always signifies 'guards' or 'protects'.

VULGAR LATIN *-tatosum*, PORTUGUESE *-dadoso* AND *-doso*

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[Two hitherto neglected VL forms are adduced as evidence that the haplology usually assumed in the development of this ending must have taken place, if at all, in the VL period or earlier, not in OPt., as has been believed.]

The common explanation of Portuguese adjectives ending in *-doso* is that they result from haplology in forms in which the familiar suffix *-oso* (< Cl.L *-osum*) has been added to words ending in *-dade* or *-dado*, such as *caridade*, *cuidado*. Thus the development would have been: *caridade*, **caridadoso*, *caridoso*; *cuidado*, *cuidadoso*, *cuidoso*.

Williams[1] derives *cuidoso* from *cuidadoso* by haplology. The following seems a simpler explanation: OPt. *cuido* 'thought'[2] plus *-oso* > MPt. *cuidoso* 'attentive, careful'; *cuidado* 'care, attention' plus *-oso* > *cuidadoso* 'careful, diligent'.

For Pt. *saudoso*, it could be assumed that *-oso* has been added to *saudade*, giving **saudadoso*, from which *saudoso* has been derived by haplology. Another possible explanation follows: Cl.L *solitudinem* > OPt. *soidom*[3] 'solitude'; to this noun *-oso* has been added, giving MPt. *soidoso* 'yearning, longing, ardent, heartfelt'. Also, Cl.L *solitates* > OPt. *soidades*[4] 'longing for an absent person'. Then, by contamination with *saudar* (< Cl.L *salutare*) 'to greet, to salute', *soidades* gives rise to *saudades* 'greetings to an absent person', and *soidoso* gives rise to *saudoso* 'having kind memories of, and longing for, an absent person'. Meyer-Lübke[5] seems to support this view when he derives Pt. *saudade* from Lat. *solitas* (acc. sg. *solitātem*); further confirmation is to be found in the fact that *soidoso* and *saudoso* are synonymously defined in modern Portuguese dictionaries.

Williams derives Pt. *humildoso* from VL **humilitosum*.[6] An essential part of the problem of this word is the origin of the *-d-* in Pt. *humilde*

[1] Edwin B. Williams, From Latin to Portuguese §114.A (Philadelphia 1938)·
[2] José J. Nunes, Crestomatia arcaica², Glossary s. v. *cuda* (Lisbon 1921).
[3] José Leite de Vasconcellos, Licões de Philologia 297 (Lisbon 1911).
[4] Williams §57.1.A.
[5] REW 8072.
[6] Williams §57.4.

'humble' (presumably coming from Lat. *humilem*).   This *-d-* is probably the result of a back-formation from another word formed on *humilem* and having *-d-*.   The two most likely words are *humildoso* and *humildade*.   If *humildoso* be responsible, then of course this cannot have been formed from *humilde*.   Spanish has a similarly anomalous *humilde*, and also *humildad*, corresponding to Pt. *humildade*, but no *humildoso*.   It seems probable, therefore, that *humilde* is a backformation from the abstract noun in both languages.   If this be so, then there is no further necessity of avoiding the theory that *humildoso* is the result of adding the familiar suffix *-oso* to *humilde*, and no hypothetical Vulgar Latin forms are necessary to the explanation.[7]

Grammont[8] gives the form *ruindoso*, without gloss.   Such a word, if it exists, may be the result of a contamination of *ruinoso* 'ruinous' by *ruidoso* 'noisy', or it may be a formation on *ruim* 'bad' with the suffix *-doso*, like *bondoso* and *maldoso*, below.

Grammont objects to the explanation of words of this type by haplology, but does not offer the obvious objection that the supposed intermediate forms in *-dadoso* are excessively rare in Portuguese.   His explanation, that *-doso* is interchanged with *-dade* in words having *-dade* (thus: *bondade*, *bondoso*; *maldade*, *maldoso*, etc.) is not very convincing, as such an interchange is not usual in Portuguese suffixation.

Williams[9] derives *-doso* from *-tatosum* by haplology, and gives as an example **aetatosum* > **idadoso* > *idoso*; thus he implies that the haplology took place in Old Portuguese.

Du Cange[10] gives *caritosum* and *pietosum*, which obviously became Pt. *caridoso* and *piedoso* respectively.   Further, although the form is not attested, it seems probable that Vulgar Latin had **impietosum* 'impious' beside *pietosum* 'pious'; cf. the Spanish form *impiedoso*.   Pt. *impiedoso* would be the regular derivative of such a Vulgar Latin form. VL *caritosum*, *pietosum*, **impietosum* may well have come from earlier VL **caritatosum*, **pietatosum*, **impietatosum*, though the forms are not attested.

Pt. *impidoso* is perhaps derived from a VL **impedītosum*, the acc. sg. m. form of an adjective **impedītosus*, formed by adding Lat. *-osus* to *impedītus*, the perfect participle of the verb *impedīre*.   If this be so,

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[7] Pt. *humildoso* could also be the result of the addition of the suffix *-doso* (as in *bondoso*, etc., above) to the Portuguese adjective *humil*, but as the latter is rather rare and learned, the explanation given seems more probable.

[8] Maurice Grammont, Traité de Phonétique 336 (Paris 1933).

[9] Williams §114.

[10] Glossarium Mediae et Infimae Latinitatis, s. v.

then there is, of course, no question of loss by haplology of an earlier medial syllable -ta-.

In Pt. *habilidoso*, the fact that the intertonic -*i*- did not fall would seem to indicate a semi-learned development, probably of a VL **habilitosum*, which may in turn have come from earlier VL **habilitatosum*.

For the remaining words with this ending, the simplest explanation seems to be that they are Portuguese formations with a suffix -*doso*, which has been taken by wrong division from the words just discussed and possibly also from those words in which Pt. -*oso* has been added to a stem ending in -*d*-, thus giving an apparent suffix -*doso* (e. g. *cuido*, *cuidoso*; *duvida*, *duvidoso*; *fralda*, *fraldoso*; *greda*, *gredoso*; *lodo*, *lodoso*, etc.).

Thus the words in this group would have had the following developments:

VULGAR LATIN	PORTUGUESE
*caritatosum > *caritosum* >	*caridoso* 'charitable'
*pietatosum > *pietosum* >	*piedoso* 'pious'
*impietatosum > **impietosum* >	*impiedoso* 'impious'
*habilitatosum > **habilitosum* >	*habilidoso* 'adroit'
*aetatosum > **aetosum* >	*idoso* 'very old'
*impeditosum >	*impidoso* 'difficult'

PORTUGUESE		PORTUGUESE
humilde	plus -*oso* >	*humildoso* 'humble'
cuido	plus -*oso* >	*cuidoso* 'attentive, careful'
cuidado	plus -*oso* >	*cuidadoso* 'careful'
soidom	plus -*oso* >	*soidoso* 'yearning, etc.'
ruinoso *ruidoso* }	(contamination) >	*ruindoso*
soidoso *saudar* }	(contamination) >	*saudoso* 'having kind memories of, and longing for, an absent person'
bom	plus -*doso* >	*bondoso* 'good, full of goodness'
mal	plus -*doso* >	*maldoso* 'bad, rascally'

and possibly:

ruim	plus -*doso* > *ruindoso*
humil	plus -*doso* > *humildoso* 'humble'

The most serious objection to this apparent neglect of a possible Portuguese haplology in the explanation of these words is that Spanish

has *bondadoso*, from which Sp. *bondoso* seems indeed to have been derived by haplology. Spanish forms cannot, however, be allowed too great an influence on this problem in Portuguese, as Spanish lacks forms equivalent to Pt. *caridoso, piedoso, idoso, humildoso, cuidoso, maldoso, saudoso*, and *ruindoso* (although it has *cuidadoso, habilidoso, impiedoso, bondoso*).

ANALOGICAL FORMATIONS IN OLD NORSE

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I. The genitive singular ending *-ss* for *-s*.

A. After a long vowel. The adjectival type *grā-ss* 'grey' may be due to the example of the type *fūs-s* 'desirous', *laus-s* 'loose', *vīs-s* 'wise', etc., with historically correct *-ss*, which through false abstraction came to be felt as the gen. sg. ending; similarly the substantive type *bū-ss* 'dwelling', *trē-ss* 'tree', etc., after the pattern of the type *īs-s* 'ice', *lās-s* 'lock', etc.

B. After a short vowel. The *-ss* of the personal pronoun *þess*[1] may be due to the example of the gen. sg. form of the demonstrative pronoun *þessa* (dat. sg. *þessum*), where the second *s* belongs to the enclitic particle *-sa*. The *-ss* in *þess* was then transferred to the interrogative pronoun *hues-s*. The occasional writing *-ss* in the substantive form *hirðiss* 'shepherd' may be due to the influence of *þess*. The syllable *-ðis* in *hir-ðis* could have been associated with *þes* by virtue of the initial *ð-* : *þ-* and the final *-s*; *þes(s)* : *hir-ðis(s)*. This association was later facilitated when *hirðis* became *hirðes*; *þes(s)* : *hir-ðes(s)*.

II. The loss of *j* before *a* in the substantive *jan*-stems. Examples are fairly numerous: *aðil-i,-(j)a(r)* 'chief prosecutor in a law suit', *bryt-i,-(j)a* 'breaker [of rings], warrior', *nið-i,-(j)a* 'descendant', *skyt-i,-(j)a* 'shooter', *vil-i,-(j)a* 'will, desire', etc. This loss of *j* before *a* is clearly due to analogy with the *an*-stems, but the development of the analogical process has never been traced.

(1) The original point of contact between the *jan-* and the *an*-stems was the nom. sg. form, where the ending *-i* was the same for both stems;

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[1] Eduard Prokosch, A Comparative Germanic Grammar (Linguistic Society of America, Philadelphia 1939) 269, suggests that the *-ss* in *þess* originated under the influence of the *-nn* in the masc. acc. sg. form *þann*. But this influence seems more remote than that of *þessa*. The hypothesis that the *-ss* is phonetically correct (Noreen, Aisl. Gram.[4] §280, Anm. 4; van Helten PBB 36.436, IF 26.174) is not convincing in view of the fact that *-ss* does not appear in the corresponding form of any other OGmc. dialect.

but first of all where the radical vowel was incapable of umlaut, since in the nom. sg. form only the umlauted vowel differentiates the two stems (cf. *niði* < **niðjan* : *vīsi* 'leader' < **wīsan*, but *bryti* < **brutjan* : *gumi* 'man' < **guman*).

(2) Since the umlauted radical vowel was the differentiating element in the nom. sg. form, the confusion between the two stems was increased (a) by the presence of an analogical umlauted radical vowel in the *an*-stems, and conversely (b) by the presence of an unumlauted radical vowel in the *jan*-stems.

(a) Examples are *end-i*,[2]*-a* 'end', *gylf-i*,[3]*-a* 'prince, warrior', *byrl-i*,[4]*-a* 'cup-bearer'. Here the umlauted radical vowel does not serve to differentiate the two stems in the nom. sg. form (cf. *gylf-i,-a* : *bryt-i*,[5] *-ja*).

(b) The type *aðil-i,-ja* with historically correct unumlauted radical vowel *a*. The absence of umlaut here fails to differentiate the two stems in the nom. sg. form (cf. *aðil-i,-ja* : *skapar-i,-a* 'creator', *han-i,-a* 'cock').

Finally it must be borne in mind that the *an*-stems were far more numerous than the *jan*-stems, which fact may explain the loss of *j* before *a* in the *jan*-stems instead of the insertion of *j* before *a* in the *an*-stems[6] as the result of analogy between the two types of declension.

EARLY MODERN HIGH GERMAN *dasig* AND *hiesig*

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[Early MnHG *dasig* is explained as a contamination of *daig* (*da* + suffix *-ig*) with the article *das*; *hieig* (*hie* + *-ig*), by analogy with *dasig*, was remodeled to *hiesig*, whence the verb *hiesigen*.]

In late Middle High German the following synonyms occur: 1. *daig* (< adverb *da* 'there' + the common adjectival suffix *-ig*) and *dasig*, whose probable origin I shall discuss, both meaning 'dieser da, derjenige,

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[2] The *e-* in *endi* is due to the older form *endir* (Goth. *andeis*) from which it was derived (cf. Noreen, Geschichte der nordischen Sprachen, Paul's Grundriss 3, §195, 4, Berlin 1928).

[3] The *-y-* in *gylfi* is due to the older form *Gylfir* 'name of a prince' (cf. *endi* above).

[4] The *-y-* in *byrli* is probably due to the derivative verb *byrla* 'to pass, fill the cup' (cf. Hjalmar Falk, Altnordische Nomina Agentis, PBB 14.37).

[5] That the substantive *skyl-i,-ja* 'prince' escaped the influence of *gylf-i,-a* or of *bryt-i,-a*, *skyt-i,-a* may be due to the fact that the word *skyli* was restricted to poetry. Poetic words have a tendency to resist analogical phonetic changes.

[6] Cf. e.g. *bryt-a* like *gylf-a*, but never **gylf-ja* like *bryt-ja*; *aðil-a* like *skapar-a*, but never **skapar-ja* like *aðil-ja*.

dergleichen, dort befindlich'; 2. *hieig* (< *hie* + -*ig*) and *hieisch* (< *hie* +
-*isch*) 'hier befindlich, dieser'.   The third derivative of *hie*, namely
hiesig, is not attested in late MHG, but is mentioned by Stieler 1691
and used by Opitz with the meaning 'dieser' in the 17th century.[1]
However, a verb *hiesigen* 'hie sein, wohnen', obviously made up on
the form *hiesig*, is cited by Lexer.[2]   From this evidence it is safe to
assume that *hiesig* existed in late MHG or early Modern High German.
Weigand[3] cites an example of *hiesig* from Schönsleder 1618.   *Hieig*,
apparently limited for the most part to late MHG, is, however, found
as late as 1562 in Mathesius' Sarepta.

The etymology of *daig*, as noted above, is fairly clear, that of *dasig*
not quite so clear.   Grimm[4] and Heyne[5] say that the *s* is inserted for
euphony.   Wilmanns[6] merely notes that an *s* has been 'eingeschoben'.
Curme[7] observes that the *s* is present to prevent hiatus.   Paul[8] admits
that the *s* is 'unaufgeklärt'.   These statements tell us absolutely nothing
about the history of the *s*.   As far as I have been able to discover, this
use of *s* in German is limited to the two words under discussion.   I
should like to propose a tentative solution, namely that *dasig* is the
result of the contamination of *daig* and *das*, the article.   The occasional
spelling *dassig* is fairly reliable evidence of this contamination.

Concerning *dasig* Heyne says: 'verschieden von einem alten ausge-
storbenen *dasig*, mhd. *dāsic*, welches "dergleichen, dieser" bedeutete.'[9]
He cites *dasig* from the 17th century.   This is early Modern High
German.   Lexer[10] cites it from late Middle High German.   Heyne
thus holds that *dāsic* died out between the two periods (a rather short
space of time, to be sure) and was re-formed with a different meaning.
If *dasig* was a reformation, it was formed from precisely the same ele-
ments which made up the late MHG *dāsic*.   It is doubtful that the
form died out.   Drescher[11] says that the word is very frequent in Arigo,
translator of the Decameron (middle of the 15th century), and gives

[1] F. Kluge, Etymologisches Wörterbuch der deutschen Sprache[10] 217.
[2] Mittelhochdeutsches Handwörterbuch 1.1281a.
[3] Deutsches Wörterbuch[5] 1.332.
[4] Deutsche Grammatik 2, §391 and Deutsches Wörterbuch 2.809.
[5] Deutsches Wörterbuch 2.151b.
[6] Deutsche Grammatik 2.459.
[7] A Grammar of the German Language[2] 420.
[8] Deutsche Grammatik 5.96.
[9] Deutsches Wörterbuch 2.151b.
[10] Mhd. Handwörterb. 1.411b.
[11] Quellen und Forschungen 86.132–4.

numerous citations of this word. Schmeller[12] cites both *daig* and *dasig* from the Codex Germanicus Monacensis (379 bl. 102) and from the translation of Marco Polo's Travels in the same Codex, printed in Nurnberg in 1477. The Bavarian Schaidenraisser in his translation of the Odyssey in 1537 attests *dasig* frequently. Thus I suspect that the word, never very widespread, maintained its existence throughout from the time of its formation and was perhaps dialectally distributed. This is based on the fact that in some few authors (mostly Bavarian) *dasig* was used freely, whereas in others of the same period there is not a single attested occurrence. Drescher thinks *dasig* may have arisen in Bavaria in the 15th century and gradually spread north. This may well be the case. The *r*-less forms *hie* and *da* are generally considered to be Bavarian in origin.

As for the difficulty of meaning (if any exists), Kluge[13] says that *dasig* in Schaidenraisser 1537 means 'eben dieser', not 'dort befindlich'. The confusion between use as a demonstrative pronoun with the meaning 'dieser, dieser da' and as an adjective with the meaning 'dort befindlich' must have been ever present. Thus the contamination of *daig* and *das* was almost inevitable. *Daig* soon fell by the wayside, but *dasig* still exists, in school dictionaries at least.

Whether *daig* or *hieig* was formed first is impossible to determine, of course, and does not really matter. The point is that they both existed in late Middle High German. I submit that *hiesig* arose by analogy with *dasig*: the proportional analogy *daig* : *dasig* = *hieig* : X gives *hiesig*. The verb *hiesigen* fairly assures the occurrence of this process in the late Middle High German period.

It should be noted that none of the forms cited above was at all widespread during the early Modern High German period. All the evidence points to that fact. Stieler 1691 and Frisch 1741 consider the form *dasig* a new formation and note that it has not been generally accepted in the 'Schreibart'.

[12] Bayerisches Wörterbuch 1.476.
[13] Etym. Wörterb. d. deutsch. Spr.[10] 89.

REVIEWS

PHONETICS AND PHONOLOGY. By BAREND FADDEGON. (Mededeelingen der Koninklijke Nederlandsche Akademie van Wetenschappen, Afd. Letterkunde; Nieuwe Reeks 1.10.) Pp. 45 with 3 plates. Amsterdam, 1938.

The eminent Dutch indologist argues in this book that phonetics, phonology, and psychology of speech are in principle one science, and that our perception of the phoneme is based on a subconscious bidimensional system of associations. The book is an attempt to prove these theses.

The association of consonantal sounds on a kinesthetic basis is, of course, not entirely new. Faddegon has shown (Tijdschrift voor Nederlandsche Taal- en Letterkunde, 1907) that certain consonantal sounds are linked by subconscious associations; some by kinesthetic, some by auditive resemblances. Pāṇini seems to hint at this in his Aṣṭādhyāyī (2.2.33, cf. Wackernagel, IF 56.161-70). Winkler has treated it in his theory of the order of the Semitic alphabet (Aleph-Beth-Regel, Festchrift E. Littmann, Leiden 1935), and Gutzmann has demonstrated it as well (Physiologie der Stimme und Sprache, Braunschweig 1928). Vocalic association, however, at least on Faddegon's basis, is something new.

Following Eykman (Zwaardemaker en Eykman, Leerboek der phonetiek, Haarlem 1928), Faddegon subscribes to the two-cavity theory of vowel production. According to this, the quality of a vowel is dependent on the tones (pitches) of the upper and lower supraglottal cavities which reinforce certain of the gamut of partials produced at the glottis. In the present state of the science it is rather dogmatic and highly questionable to insist that the partials governing the quality of a given vowel are reinforced by (the fundamentals of) these two cavities alone. Faddegon here advocates Paget's theory of the double resonators (originally postulated by Bell and Lloyd), which certainly cannot be considered the final chapter in vowel-quality studies. In fact, Paget's coupled-resonators gave disappointing results when tested purely objectively, while his cupped bare hands with a reed gave fair imitations of isolated vowels. Helmholtz, Miller, and Stewart were

able to obtain certain vowels (poorly) with but one resonator. This can easily be demonstrated by a single tube with a sliding cork. Meyer and Russell, on the other hand, have shown with their X-rays that the cavities (cavity-sizes) alone are not necessarily the only factors entering into vowel-quality. It is entirely possible that the high formants of [i] may be due to the nature of the cavity surfaces which respond to different periods of the high partials.

On the basis of the two-cavity theory Faddegon arranges the fifteen vowels of the Netherlands language into a diagram showing the relationship by similarity of pitch of the front or back resonance-chamber. His table (plate II) of the pitches of the front and back resonance-chambers would seem to indicate that he believes the pitches are constant. A comparison of his chart with Paget's or Crandall's and Sacia's (Bell System Technical Journal 3.2.232–7) shows that while there is a good analogy, the correspondences are not exact. Not all investigators have gotten the same results. This is not surprising in view of the large number of variables in resonance, tension, surface-makeup and the like. Miller (The Science of Musical Sounds, New York 1926), Crandall (The Sounds of Speech 26, Bell Telephone Laboratories, Nov. 1925), Stumpf (Die Sprachlaute, Berlin 1926), and Paget (Human Speech, New York 1930) have found different cavity tones for [ɑ] and [u], and Russell (Speech and Voice, New York 1931) was able to change [ɑ] to [u] by varying $D^{\#4}$ (615 d.v./sec.) to D^4 (581 d.v./sec.). Further, Russell's X-rays have conclusively shown that not all people form the same vowel in exactly the same way. A similar acoustic effect may be produced in different ways.

According to Faddegon, when the tympanum is set in motion, the relational subconsciousness distinguishes readily between the high and the low formants. Those vowels which have similar (or nearly similar) back-chamber tones (formants reinforced in certain frequencies which happen to correspond) are associated mutually. Likewise for those with similar front-chamber tones. Thus, the Netherlands *oe-a* row (comprising *oe, oo, ou, o,* and *a*) forms a distinct category of vowels possessing similar back-chamber reinforcements. Further, the relational subconsciousness selects any given vowel out of this group by the relative position of the partials. And the *oe* is also associated with *uu* and *ie* by virtue of similar front-chamber tone. Each vowel can, therefore, be related in two directions. This is the mechanics of his subconscious bidimensional system of association. It is a system of crossing associations of sound images. A phoneme is created (or perceived)

whenever such a junction takes place.   If phonemes are created, by this
system, by the psychical mechanism from a sound-complex, and if this
sound-complex is as susceptible of analysis as Faddegon thinks, then
the entire problem of 'who calls what a phoneme' is automatically
solved.   Since phonemes are created without conscious thinking on the
part of the hearer, Faddegon is led into a rapt admiration of the teleology
of phonemic perception.   And it is interpolations of this sort which
interfere with the otherwise objective character of his book.   As inter-
esting as this theory is, it certainly cannot be considered definitive.

Faddegon does not appear to the reviewer to have united phonetics,
phonology, and psychology of speech.   There is a strong plea for this,
but his views do not stand comparison with Ernst Otto's Phonologie
und Phonetik (IF 55.17 ff.).   The two-cavity theory and the resultant
two-partial reinforcement for characteristic vowel quality is somewhat
dubious, to say the least, and his phonological views leave the reader
somewhat in doubt as to exactly what he thinks a phoneme is.   Phonemi-
cally, he belongs neither to the physiological London and French schools
nor to the psychological pattern school of Sapir and Troubetzkoy, al-
though he is allied in spirit to the latter.   If, as Faddegon maintains,
phonetics, phonology, and psychology of speech are one science, there
would be no difficulty in equating Troubetzkoy's phoneme (which con-
sists of what one imagines one pronounces[1]) with Gemelli's and Pastori's
(which consists of simple, measurable, oscillatory phenomena).   At
present, the union of these three fields of investigation seems unattain-
able, even in principle, since each is going its own schismatic way.

To demonstrate the connection which his phonetics and phonology
have with the psychology of speech, Faddegon conducted a series of
tests.   These were to prove that some ordered relation exists between
any given vowel and a vowel substituted for this given vowel in memora-
tive reproduction.   Groups of eight syllables were read to various sub-
jects three times.   The subjects were then asked to repeat from memory
what they had just heard.   The syllables were nonsense syllables (*puun*,
ref; *sties, koet*; *gir, wok*; *nal, heum*, etc.) made up of well-distributed

[1] [In his final statement of the problem (Grundzüge der Phonologie, TCLP 7,
Prague 1939) Trubetzkoy explicitly rejects his earlier mentalistic definition of the
phoneme, and tries to replace it by a definition based entirely on configurational
arguments (the doctrine of phonological oppositions).   Nevertheless, although
he characterizes as 'verfehlt' his earlier description of the phoneme as 'Laut-
vorstellung' and 'Lautabsicht' (37), he not infrequently lapses into mentalistic
terminology, as when he speaks of language as living 'im Bewusstsein der Mit-
glieder der Sprachgemeinschaft' (5).—B.B.]

vowels and consonants. The subjects were shown the initial consonant to assist the memory. The answers were noted down and show that 'wherever in the memorative reproduction a vowel is substituted for another, there is a strong tendency for the subconsciousness to choose the vowels which are closely related' (i.e. by back or front-chamber tone). When a vowel was set down which was not correct (not the original one asked) it was plotted in terms of the change's being a relational change or not. A total of 1268 vowels was asked of seven subjects. The subjects repeated correctly 989 vowels and changed 289. Of these 289 changed vowels 187 were relational changes and 102 were non-relational changes. The distribution of answered vowels in relation to correct vowels, related changes or unrelated changes would seem to indicate that something other than pure chance was at work. The relational changes exceed the non-relational changes by almost two to one (187 : 102).

Assuming that the observations were 'independent' in the statistical sense, one can compute the probability of observing a given proportion of 'related changes' in N trials, on the hypothesis that all changes— related or unrelated—were equally probable. Faddegon's figures show that if there were no relation between vowels and their variants, results equal to, or better than, those obtained by his associational theory might be expected in about one case in ten for the *oe-ou* group ($P_0 = 1 - \theta > .10$); one case in five for the *u, i, e* group ($P_0 = 1 - \theta > .20$). In the case of the *o, uu, ui—ie, ei* group the theoretical probability turns out to be less than one in ten thousand, and remains less than one in ten even when the differences between the various subjects are taken into account ($P_0 = 1 - \theta > .0001$ and $P_0 = 1 - \theta > .10$).

These figures are somewhat startling, for they indicate (apparently) the presence of some type of relationship between ordered and answered vowels. If the related changes depended solely on vocalic association it would be difficult to explain the results on the basis of pure change. According to the statistics the tendency is obviously to choose related vowels. However, the principal objections against these results, aside from the general objections to the two-cavity theory, are that the number of cases of change (both related and unrelated) is too small to be subjected to probability calculations, and that the possibility of determination by the consonantism cannot be ruled out. The figures, moreover, do not rule out all theories but Faddegon's. They simply show that pure chance would not yield the same results.

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JOINT EXPEDITION WITH THE IRAQ MUSEUM AT NUZI: MISCELLANE-
OUS TEXTS. By E. R. LACHEMAN. (American Schools of Oriental
Research; Publications of the Baghdad School: Texts, Vol. VI.) Pp.
vi, with 105 plates. New Haven: American Schools of Oriental
Research, 1939.

Lacheman's volume presents copies of 113 Nuzu texts, the originals
of which are preserved at the Oriental Institute of the University of
Chicago as a loan from the American Schools. Only 3 of the texts
were known before; these appear here in an improved form. The publica-
tion continues the work of the late Edward Chiera, to whose memory
the volume is dedicated.

The new tablets are of the same type as those previously published;
only, they are not so well preserved. The author has successfully ap-
plied to cuneiform tablets a method developed at Chicago for copying
Egyptian inscriptions. The signs were inked in on photographs which
afterward have been bleached out. This method reproduces the signs
in the exact position of the original and the gaps in their exact dimen-
sions. It does not, of course, safeguard against mistakes of decipher-
ment, particularly in multilated passages. It is only human that
Lacheman's volume also contains such mistakes, but, as a whole, the
copies are faithful. In fact, they give for the first time an impression
of the real appearance of Nuzu tablets.

In a periodical devoted to linguistics I cannot dwell on Assyriological
technicalities. Having dealt on an earlier occasion (LANG. 14.134–43)
with Nuzu Akkadian, for which the new volume offers a good deal of
new material, I propose in this review to focus my attention upon the
Ḫurrian material which is scattered over the pages of the volume.
The notes must be understood as an addition to the material collected
by C. H. Gordon in Bull. of the Am. Schools of Oriental Research
64 (= Bull.) and in Orientalia NS 7.21 ff. (= Or.).

a-ku-ka₄-ru-um-ma epēšu (636 15) 'cause to enter'. Cf. Lewy, Revue
des Études Sémitiques 1938.68, fn. 8; Speiser, JAOS 59.298, fn. 36.

at-ta-aš-ši-ḫu (641 29), a term descriptive of a field and parallel to
(*eqlu*) *ša bá-bi*. The other occurrence N 256.7 confirms a meaning
'belonging to the father's estate'. We are dealing with an adjective
of appurtenance derived from an abstract in *-šši*.

e-ma-an-di in *ra-kib* ⁱⁿ*narkabti ša e.* (634 27) 'decade'. The word is
the basis of *ema(n)duḫlu* 'decurion' (Speiser, JAOS 59.321; cf. Friedrich,
MAOG 4.53 f.); it is morphologically analogous to *ši-nam-ti* (EA
60 25) 'double, duplicity'.

ú-ri-ḫu-ul-šu (607 14), *ú-ri-ḫu-ul-ša* (609 10) 'provisions' (cf. Bull. No. 13; Or. No. 44). The *-šu/a* is part of the word, as can be seen e.g. from *qa-dú ú-ri-ḫu-ul-ši-šu-nu* (N 273 19); wherever *ú-ri-ḫu-ul* (without *-šu/a/i*) appears at the end of a line (e.g. 308 19; 361 35) a misinterpretation on the part of the scribe must be assumed.

ú-ta (617 6) 'balance payment', see Koschaker, OLZ 1936. 152; Or. No. 41.

ú-te-e-na (628 2) looks like a plural of the preceding; but it appears in an entirely different context and seems to define the position of fields. See Oppenheim, RA 35.149, fn. 1; Or. No. 42.

ú-ni-ú-ur (666 10) might be a verbal form; the context suggests 'they came'. The form is inexplicable, although its stem recalls *una* 'comes' (see LANG. 15.215 ff.).

pá-i-ḫu (592 6), although inflected like an Akkadian adjective (cf. Bull. No. 59; Or. No. 52), seems to derive from a Ḫurrian formation in *-ḫi*. Is the basic word contained in *pae-ni-p(pa)* (KUB XXIX 8 III 25, 29)?

pa-bá-an-te in *a-šar ti-li p.* (654 3, 7) 'at the tell of *p.*' The word (cf. Oppenheim, RA 35.150) clearly belongs together with the stem *pab-* from which are derived *pabni* 'mountain', *pabaḫḫi* 'northern' (cf. Gordon, RA 31.102 f.), also name of a country (see Forrer, Reallex. der Ass. s.v. Babanḫi).

pu-ḫi-iz-za-ru (619 8; 662 23, 32 f.; 668 12, 20, 32; 669 11, 29) 'exchanged object' (cf. Bull. No. 60; Or. No. 63).

pu-ḫu-ka₄-ra (646 5) equaling Akk. *ḫubullu* 'loan'.

ti-iš-ša-e (618 25; 625 10) in *i-na ba-ab a-bu-ul-li ša t.* 'in the doorway of the gate of *t.*' Sometimes (e. g. H V 5 20; 15 47; H IX 19 33; 25 21; N 102 41) *ša* or *ina* ᵃˡ*Nu-zi* 'in Nuzu' is added. Is this the palace? and is there any connection between *tiššae* and Ḫurr. *tiššan* 'very (much)'?

ka-ás-ka₄ (599 22); cf. Bull. No. 45; Or. No. 88.

ku-ma-nu (584 5; 651 17, 42; 652 5, 12, 15 f.) a measure of surface. Cf. Cross, Movable Property in the Nuzi Documents 13.

ḫa-ra-ar-nu (651 17, 42) a measure of surface; cf. Bull. No. 35; Or. No. 107; Cross, Movable Property 13.

ḫa-ša-ḫu-še-en-nu (655 25) qualifying *kaspu* 'money' in connection with a girl who is given *ana rubbē* 'for being brought up'. For the problem thus raised again see Burrows, The Basis of Israelite Marriage 53 ff. Literature for the word, besides Bull. No. 36; Or. No. 110, Cross, Movable Property 41; Cassin, L'Adoption à Nuzi 304.

makaḫu in the expression a field *qa-du ma-ka₄-ḫi-šu* (631 8) 'together with its *m*.'

ma-an-za-ad-du-uḫ-li etc. (653 10, 15, 17, 27, 42; 666 40, 45; 672 32). The text 653 corroborates Koschaker's definition (OLZ 1931.225; ZA NF 9.203; cf. Bull. No. 50 and Or. No. 131) of the official as a delegate of the court. If the relationship between the *ḫalzuḫlu* and Akk. *ḫalṣum* 'fortress' is recalled, the question poses itself whether our word may be a derivative of an Akk. **ma-(n)zattu* 'substitute, substitution' which could be interpreted as a dialectical variant of *ma(n)zaztu* (cf. *zittu* 'share' from *zāzu* 'divide' and perhaps the deity *Ma(n)zat* [Scheil, RA 22.149 f.; CT XXV 31 rev. II 7; Lewy, Kültepetexte Blanckertz 42, fn. 1]).

na-aš-wa-ti (652 38) (part of a field is taken for *n*.); cf. *a-na na-aš-wa* N 159 8 and Bull. No. 57.

⁽ᵃᵐ·⁾nu-a-ru (566 23; 576 24), *nu-a-ri* (638 44?) is known from a good number of other passages; see Gelb, Inscr. from Alishar 65 f., Oppenheim, Or. NS 7.376, fn. 1. The translation 'singer' (Gelb) is very problematic, since Akk. *nārum* is a loan-word from Sumerian. If we may consider the word as Ḫurrian, it is not impossible that we are dealing with a noun indicating provenance (see Oppenheim, RHA 26.58 ff.; Speiser, JAOS 58.198 ff.). The interchange between *Ik-ki-ia* *⁽ᵃᵐ·⁾nu-a-ri* (N 96 29) and *Ik-ki-ia mār Ni-nu-a-ri* (passim) is probably due to a mistake; the conclusions which Lewy (Revue des Études Sém. 1938.70, fn. 6) draws from it must be rejected.

nu-wa-ni-wa (or *nu-wi-ir-wa*?) (664 26), according to the context 'truth'.

nu-bi (630 6) 'ten thousand'. Cf. Cross, Movable Property 36 f.; Gordon, Or. NS 7.16.

še-ḫa-li ša ᴰIŠKUR (625 12; 629 14) name of a month (see Gordon and Lacheman, Arch. Or. 10.60). For *šeḫ(a)l-* 'clean' see RHA 35.106, fn. 15.

ši-na-mu-na (634 23) 'twice' according to the context.

ši-in-ta (672 15 f., 40, 50) in *⁽ᵃᵐ·⁾mu-dè-šu ù ši-in-ta-šu* 'his witnesses and his . . . .'.

šu-ur-ru-um-ma (649 14) conveys a temporal idea, cf. Oppenheim, Or. NS 7.378; Speiser, JAOS 59.259, fn. 25 ('promptly'). It must be kept apart from *ši-ru-um-ma epēšu*, with which it was identified by Lewy, Rev. des Études Sém. 1938.68, fn. 8.

zi-li-ki-ni (667 18) is apparently the basic word from which *zilikuḫlu* (ibid. 11) is derived. The latter can only mean 'witness' in that pas-

sage and thus confirms Gordon's equation (JBL 54.141; Or. No. 156; cf. Koschaker, OLZ 1936.156) against Lacheman's suspicions (Or. NS. 7.32, No. 156; cf. Speiser, LANG. 14.308).

zu-lu-ši-ik-ka₄-um epēšu (671 28).

Uncertain as to their reading are: *x-še-en-nu* (561 5 ff.) apparently a measure of surface. *x-a-ra-an-ta-i* (582 33). *ḫé-i?-.* . (668 4). *ia-ši? ḫa-ni(-)ú-uk-ku* (671 29).

Ḫurrian elements are also contained in proper names. The *-wa* which occasionally occurs in expressions like *āl* X-*wa* 'the city of X' is the suffix of the genitive. In Ḫurrian *āl* is to be pronounced, not merely determinative (see von Brandenstein, Or. NS 8.85 f.). Notice particularly *āl Ú-na-ap-še-wa* (582 6; 589 7 etc.) beside *ālu ša Ú-na-ap-še-wa* (653 3), and contrast *āl Ú-na-ap-še* (e. g. N 190 7; 211 4) and *ālu ša Ú-na-ap-še* (N 44 5). In *āl Te-im-te-na-aš* (604 7) (cf. *āl Te-im-te-na*, e. g. N 241 8; H V 69 15) I find the corresponding form of the plural.

Noteworthy are also cases like *ša gi-ir-ri zu-ur-ri-it-tù-e* (659 5, 30), *āl Ta-az-zu-e* (670 6, 25; cf. *Ta-az-zu* ibid. 9, 52) because they show the genitive suffix in a special form which is conditioned by the preceding *u* (cf. Thureau-Dangin, Syria 12.257). Of the same type is *ša āl Nu-zu-e* (H IX 33 2), which I mention here, since it points to *Nuzu* (with final *u*) as the correct form of the name of the city (cf. Speiser's argument LANG. 14.305 f.).

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THE MEANING OF VEDIC *bhūṣati*. By J. GONDA. Pp. 28. Wageningen: H. Veenman & Zonen, 1939.

This is a small but searching, intelligent, and interesting study of the meaning of the Sanskrit 'root' *bhūṣ*, generally rendered 'adorn'. Gonda argues that it is nothing but a causative of *bhū*, and meant something like 'cause to become (what is desirable or efficient); strengthen, honor, etc.' A philological study of the Vedic (especially Rigvedic) occurrences shows, quite plausibly, that the theory fits them. It is emphasized, very rightly, that these are well-established meanings of the regular causative of *bhū* in Classical Sanskrit (*bhāvayati*; cf. the technical Mīmāṃsā term *bhāvanā* 'efficient force [of a verb form],' in the reviewer's Mīmāṃsā Nyāya Prakāśa 5, etc.; LANG. 4.174 ff.). Interesting parallels are presented to show that, in Sanskrit and even in some other IE languages, *s*-formations seem occasionally to show

causative meaning. The most striking case is *bhīṣā* 'intimidation', *bhīṣayati* 'frightens', etc., to root *bhī* (*bhayate, bibheti* 'fears', etc.). The sigmatic aorist in Greek shows a similar tendency at times, contrasting with a non-sigmatic non-causative aorist.

Final acceptance of the author's theory must depend on careful evaluation of the philological evidence, particularly the interpretation of the numerous Rigvedic occurrences of forms of *bhūṣ*. Most of the monograph is in fact devoted to this subject, showing that the author is quite aware of what sound method demands. I have called his treatment 'plausible'; I mean this in a complimentary sense. Anyone who knows the Rigveda will understand that it is no reflection on his work to add that it must be checked by equally careful study on the part of others. Such study is heartily recommended to Vedic scholars.

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PHONETIC TRANSCRIPTIONS FROM 'AMERICAN SPEECH'. Edited by JANE DORSEY ZIMMERMAN. Revised edition. (American Speech Reprints and Monographs, No. 1.) Pp. xii + 84. New York: Columbia University Press, 1939.

Seventy-five passages of English prose, transcribed in the alphabet of the International Phonetic Association, are here reprinted in book form from the columns of the journal American Speech, where they appeared from 1933 to 1939. The purpose of the collection (Preface iii) is 'to furnish phonetic transcriptions of different types of American English (and a few of British English) for those who are interested in a study of phonetic usage.' That a new edition should be called for only three years after the first appearance of this work is an encouraging sign that teachers and students have awakened to a real interest in the facts of spoken English.

The revised edition differs from the first (1936) not only in the greater number of passages included, but especially in the more systematic arrangement of these passages, which will make the book much easier to use. The contents are grouped under five headings: passages 1–21, Transcriptions of Acceptable American English, reflecting not the pronunciation of any one speaker but rather the editor's conception of educated colloquial speech—a conception pleasantly liberal and mostly free of elocutionary theories; 22–38, Transcriptions of Phonograph Records of Radio Broadcasts by American English Speakers, presenting an interesting and sometimes amusing picture of the platform style of well known political, literary, and academic figures; 39–61, Transcrip-

tions of Phonograph Recordings of the Story 'The Rat', a valuable collection of folk speech from many parts of the country; 62–71, Transcriptions of Phonograph Recordings of Miscellaneous Material; 72–5, Transcriptions of British English.

With this summary our review might well close; for the work under consideration does not claim to be a new and original contribution to linguistic knowledge. But there is one feature—not of this book alone but of many books on English phonetics—which may warrant further comment.

The Preface ends (v) with the following sentence: 'The transcriptions are for the most part phonemic, modifiers and non-English symbols[1] being used only when it seemed necessary to indicate important or unusual variations within the phoneme.' In view of the undoubtedly wide and deserved popularity of the book, this statement may do a good deal of harm; for it not only overrates the scientific validity of the least valuable passages in this collection, but distorts the real value of those passages which in the reviewer's opinion are alone worth reading.

The first 21 passages (see the summary of the contents above) are intended to illustrate the kind of pronunciation which the editor regards as acceptable; and they are accordingly transcribed in such a way as to allow the reader a certain latitude in his interpretation of the symbols. Non-distinctive features are quite properly disregarded. But even in this section the transcription, though less obviously non-phonemic than elsewhere in the book, departs again and again from the phonemic principle. Thus the list of 'Sounds and key words of American English' (2), which we are surely justified in regarding as an attempt at a phonemic inventory, includes such irrelevant distinctions as between the unstressed [e, o] of *aorta, obey,* and the stressed [eɪ, oʊ] of *ate, ode,* and between [aʊ] and [ɑʊ] in variant pronunciations of *out.* The list of 'Sentences containing American-English vowels, diphthongs, and consonants' (3–5)—a section especially important in familiarizing beginners with the meaning and use of the symbols—exhibits, as if they were distinctive, the contrasts [krim : pliːz] and [kul : muːn].[2] And in neither of these lists is there any mention of the affricates in *church,*

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[1] It might perhaps be asked how any symbol legitimately used in the transcription of English sounds can be called non-English, or indeed how Mrs. Zimmerman would justify her implied theory that the symbols of the International Phonetic Alphabet belong to particular languages.

[2] These particular contrasts are perhaps accidental, the results of inconsistency in the method of transcription rather than of a conscious attempt to discriminate between different degrees of vowel length. At any rate, such a contrast as [kul : muːn] is certainly illusory.

judge, nor—what is basically more important—of stress as a distinctive feature in English.

In all other sections (passages 22–75) the transcriptions aim at reproducing as fully as possible (that is, within the limits of the transcribers' perception and the printer's resources) the individual or dialectal flavor of the pronunciations recorded; and for this purpose they employ a considerable variety of special characters, superior letters, and diacritics. They are a lively record of actual utterances, acutely perceived and skilfully written; but they are not phonemic.

In a well known passage of his book Language,[3] Bloomfield states that only one kind of transcription is scientifically relevant: 'a record in terms of phonemes, ignoring all features that are not distinctive in the language.' If this statement is true without exception, then the book we are discussing—once the claim that its transcriptions 'are for the most part phonemic' has been disproved—is scientifically worthless. Such a judgment, however, would not only be unfair to this book, but would deny the relevance of a great body of obviously valuable work. It is true that only a phonemic transcription is useful in exhibiting the structure of a language or as a basis for grammatical analysis. But there is another kind which is useful in a different way, sometimes more useful than a record in terms of phonemes; this is phonic transcription, which aims at representing everything the writer can hear and identify in the utterance to which he is listening—that is, to approximate as nearly as possible a complete record of what Bloomfield calls the gross acoustic features.[4] Such a transcription is not only the essential first step in the recording of a new language, and thus the preliminary to a phonemic analysis; above all, it is the indispensable tool of the dialectologist. Whoever compares or contrasts the pronunciations within a single dialect area, epecially in a country like ours, finds not only that a phonic transcription is useful, but that any other kind would be useless. This principle, successfully applied to the collection of material for the Linguistic Atlas of the United States and Canada, is made clear by the following statement:[5]

[3] Language (New York 1933) 85.

[4] In its pure form such a transcription has certainly never existed. Even the most painstakingly minute record usually neglects to indicate such features as tempo, the relative loudness of different stress groups, the relative duration of pauses, and individual voice quality. In practice, phonic transcription shows simply those relatively few features in the stream of speech which the writer has been trained to recognize. (Cf. Bloomfield, Language 84–5.)

[5] Hans Kurath and others, Handbook of the Linguistic Geography of New England (Providence 1939) 122–3.

The field workers' phonetic notations, which appear on the maps of the Linguistic Atlas unchanged . . . , are not phonemic, but on the contrary intentionally phonic, that is *impressionistic*. The phonemic pattern of an informant's speech can be determined only after long and careful study, and only on the basis of a large body of material first recorded impressionistically—certainly not under the conditions of field work, which require that the interviews proceed as rapidly as possible, and that the informant's first utterance be transcribed as accurately as his last.

The pronunciation of two sections, of two generations or of two individuals often differs strikingly; but in most cases the differences are without phonemic value. Thus, the difference between [faɪv] and [fɐɪv], between [kaʊ], [kəʊ] and [kɛʊ], . . . etc., is nonphonemic, but of the greatest importance to linguistic geography and dialectology, and to historical grammar as well. Accordingly, the field workers were instructed to record what they heard as accurately and minutely as they could, without attempting to normalize their transcriptions or to interpret their auditory impressions in terms of a phonemic system. If two utterances of the same word by the same informant struck their ears as different— no matter how small the difference might be—, they were to write them differently. As a result, the field workers' records may well include some observations of minute phonetic detail too trivial to be of much use to the linguist. But on the other hand this procedure has several great advantages: small differences which may turn out to possess phonemic importance are not overlooked; positional and accentual variants of phonemes, required for the proper description of a dialect, are duly observed; and such nonphonemic differences in pronunciation as are characteristic of regional and social dialects automatically come to light. . . .

It seems clear, then, that the transcriptions in Mrs. Zimmerman's collection cannot all be judged alike. Those which aim to be phonemic are nearly or quite valueless for scientific use, since they rest on a faulty analysis of American English and violate the basic principle 'one phoneme one symbol'. Those, on the other hand, which attempt to record as minutely as possible the auditory impressions of the transcribers, without reference to phonemic structure, are an important contribution to our knowledge of American speech. If these transcriptions should come to be misunderstood and misinterpreted by the public of non-specialists for whom the book is intended, it would be largely because of the editor's unfounded claim that they are 'for the most part phonemic'.

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NOTES AND PERSONALIA

THE LINGUISTIC SOCIETY OF AMERICA will hold its Seventeenth Annual Meeting at Providence, on December 30–31, 1940, at the invitation of Brown University, which will be the host of the occasion. It will hold the Third Special Summer meeting at Ann Arbor, July 26–27, 1940.

LEONARD BLOOMFIELD, now Professor of Germanic Philology at the University of Chicago, will go to Yale University in September of this year as Sterling Professor of Linguistics.

GEORGE HERZOG, Assistant Professor of Anthropology at Columbia University, has been elected by the Executive Committee to represent the Linguistic Society on the Council of the American Association for the Advancement of Science, succeeding the late Edward Sapir.

EDWARD W. NICHOLS, Head of the Department of Classics at Dalhousie University, Halifax (Nova Scotia), and a Foundation Member of the Linguistic Society of America, died in Halifax on August 26, 1939, in his fifty-eighth year.

He was born at Lansdowne, Nova Scotia, on November 4, 1881, and received the degrees of B.A. and M.A. from Dalhousie University in 1906 and 1910, and that of Ph.D. from Yale University in 1913. After serving as Instructor in Classics at Yale University 1913–8, he returned to Dalhousie University and there taught the classical languages until his death, serving through the various academic ranks until he became McLeod Professor of Classics and Head of the Department. He was the author not merely of several studies in the semantics of Latin terminations, but also of a series of essays dealing with the social and recreational aspects of life.

A FAR EASTERN INSTITUTE will be held in connection with the Summer School of Harvard University from July 1 to August 10, 1940, as part of the program of the Committees on Chinese and Japanese Studies of the American Council of Learned Societies. The main object of the enterprise is to provide special instruction for a selected group of students to be known as Members of the Institute, who will be expected to devote full time to this work. Courses will be offered in the History of Chinese Civilization, the History of Japanese Civilization, and the Art of China and Japan. Further information may be secured from

Dr. John King Fairbank, Director of the Far Eastern Institute, 41 Winthrop Street, Cambridge, Mass.

THE FOLLOWING NEW MEMBERS FOR 1940 have been received into the LINGUISTIC SOCIETY OF AMERICA subsequent to the last published list, and up to March 7, 1940:

Charles J. Adamec, Ph.D., Dean and Professor of Classics, Knox College, Galesburg, Ill.; *Greek, Latin, Sanskrit.*

Elizabeth K. Allen (Mrs. Joseph H. D., Jr.), A.B., 704 W. California Ave., Urbana, Ill.; *French, Italian.*

George K. Anderson, Ph.D., Associate Professor of English, Brown University, Providence, R. I.; *Germanics.*

Marjorie Anderson, Ph.D., Assistant Professor of English, Hunter College; 135 E. 74th St., New York City; *Old English.*

Preston G. Atkins, A.B., graduate student in Germanics, University of Pennsylvania; 120 E. Cottage Place, York, Pa.

Helen W. Black, graduate student in Linguistics, University of Michigan; 1805 Hermitage Road, Ann Arbor, Mich.

James C. Cornette Jr., M.A., Assistant in German, University of North Carolina; Box 813, Chapel Hill, N. C.

Samuel H. Cross, Ph.D., Professor of Slavic Languages and Literatures, Harvard University; 545 Widener Library, Cambridge, Mass.

Robert M. Estrigh, Ph.D., Assistant Professor of English, Ohio State University, Columbus, Ohio.

Louis Gade, 1116 D St., N.E., Washington, D. C.

Eugene Gottlieb, Ph.D., 501 W. 138th St., New York City; *Germanic, Slavic, Semitic, Finno-Ugrian.*

Abraham M. Halpern, A.B., Dept. of Anthropology, University of Chicago, Chicago, Ill.; *American Indian languages.*

Kiffin R. Hayes, A.B., graduate student in comparative linguistics, University of North Carolina; 741 E. Franklin St., Chapel Hill, N. C.

Arthur Jeffery, Ph.D., Professor of Semitic Languages, Columbia University; 606 W. 122nd St., New York City.

Ruth Marie Lilienthal, student at Bryn Mawr College; Rhoads Hall, Bryn Mawr, Pa.; *Germanic linguistics.*

Woodburn O. Ross, Ph.D., Assistant Professor of English, Wayne University; 302 Monterey, Highland Park, Mich.

Benno H. Selcke, Ph.D., Instructor in German, Wesleyan University; 200 College St., Middletown, Conn.; *comparative syntax.*

Francis Lee Utley, Ph.D., Instructor in English, Ohio State University, Columbus, Ohio; *Old and Middle English, semantics.*

THE GREEK ASPIRATED PERFECT

E. H. Sturtevant

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[Greek perfects in -φα or -χα from verb-stems ending in π, κ, or γ owe the aspiration to Indo-Hittite perfect endings beginning with a voiceless laryngeal: 1st sg. -χα and 3d pl. -'ʋr.]

The Greek aspirated perfects such as πέπομφα beside πέμπω have been much discussed but no plausible explanation of them has yet been found. Osthoff,[1] to be sure, long ago pointed out an important factor in the spread of the type. Such a verb as σκάπτω beside σκάφη has many forms in which the character of the final consonant of the root is disguised (σκάψω, ἔσκαψα, ἔσκαμμαι, ἔσκαπται, etc.), and so the pair ἔσκαψα : perf. ἔσκαφα might lead to βέβλαφα beside ἔβλαψα.

The reason why this theory alone cannot account for the facts is that all the assumed inducing forms are ambiguous. The first element of Gk. ψ is a part of the phoneme φ as well as a part of the phoneme π, and therefore ἔσκαψα must have been interpreted as containing the stem σκαφ- as long as this stem was clearly preserved in numerous related forms. Osthoff discovered a part of the machinery by which the aspirated perfects spread; but he did not point out the necessary models in which an aspirate in the perfect came to stand beside an unambiguous non-aspirate in related forms.

A further weakness of Osthoff's treatment was that he did not take into account the remarkable distribution of the aspirated perfects in Homeric Greek. This had already been pointed out and Osthoff duly mentioned it; but, since it did not fit into his explanation, he simply disregarded it. In Homer the aspirated perfect is confined to third person middle forms with the ending -αται or -ατο (τετράφαται, τετράφατο beside τρέπω). Active forms like πέπομφα are exclusively post-Homeric and chiefly Attic.

In view of the Homeric forms J. Schmidt[2] suggested that the aspira-

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[1] Zur Geschichte des Perfects im Indogermanischen mit besonderer Rücksicht auf Griechisch und Lateinisch 284–323 (1884).

[2] KZ 27.311–3 (1885), 28.176–84 (1887).

tion started with middle imperatives like τετράφθω and infinitives like τετράφθαι, where -φθ- regularly appears for -πσθ- (*τετραπ-σθω). But this theory is open to the same objection as the other; -φθ- is as ambiguous as -ψ-.

Gustav Meyer[3] had previously suggested that the Homeric and Ionic aspiration in τετράφαται, etc., might perhaps be. due to the following syllabic nasal. Osthoff and Schmidt rightly concluded that there was nothing in the ending -αται (from -ṇtai) that could account for the aspiration, but it is nevertheless sound method to look for the origin of the phenomenon in precisely the place where it first appears.

It is clear that all the 3d pl. endings of the Greek perfect are intruders from the present-aorist system. We must find the original perfect ending in the Hittite preterite ending -er, the Sanskrit perfect active -ur (Av. -arə) and middle -ire, the Latin perfect -ēre, and the Tocharian -r(e) (e.g. A wenār, B wenāre 'they said'). Since, then, the ending -αται cannot account for the aspiration of τετράφαται, we must turn to its predecessor. This must have existed in three different ablaut forms. Lat. ēre, supported by Hitt. -er, implies IE -ēr, no doubt originally accented. Skt. -ur and Av. -arə imply IE -ʊr, which would regularly alternate with the -r implied by Toch. -r(e).

It is barely possible to consider the long vowel of IE -ēr a lengthened grade vowel, although no reason is apparent for that grade. The alternative is to assume a laryngeal and to reconstruct Indo-Hittite -e'r.[4] If we follow this course we must trace Skt. -ur, IE -ʊr to IH -'ʊr; for IH -ʊ'r would yield IE -ər, Skt. -ir. But IH -'ʊr is precisely the sort of ending that would yield an Indo-European voiceless aspirate according to the theory of de Saussure and Cuny[5]; IH tétr̥-'ʊr would become IE tétrphʊr, whence, with substitution of a present ending, Gk. τετράφαται.

[3] Griechische Grammatik¹ 423 (1880).

[4] For the system of Indo-Hittite laryngeals with which I operate, see LANG. 16.81–7, especially 81 and fn. 2. The first laryngeal rather than another must be assumed in this ending because of Lat. -ē- and the lack of a written laryngeal in Hittite.

[5] De Saussure, BSL 34.CXVIII (1892); Cuny, Revue de phonétique 2.118–20 (1912). Cf. Kurylowicz, Études indoeuropéennes 1.46–72, who correctly concludes that γ voices a preceding voiceless mute (Skt. pibati from IH pi-bγe-ti in my writing), while the other three laryngeals aspirate such a sound (e.g. Skt. tiṣṭhati < IH ti-st̕-eti). Kurylowicz is wrong in confining this aspiration to Indo-Iranian, as is shown by Gk. οἰσθα = Skt. vettha and by the aspirates discussed in this paper.

Such a reconstruction implies a dissyllabic base for the ending, namely -*e'er*, either one of whose vowels might suffer complete loss according to the quantity of the preceding syllable, yielding IH -ʙ'r > IE -ǝr after a long syllable, IH -'ʙr > IE -ʙr after a short syllable. The second of the two possible unaccented forms accounts for the Indo-Iranian ending and for the Greek aspirate. The lack of aspiration in Sanskrit must be traced either to the analogy of other perfect forms or to the originally alternating forms with IH -*é'r* > IE -*ér* and IH -ʙ'r > IE -ǝr. Clearly the theory would be supported by a Sanskrit ending -*ir* from IE -ǝr; and I think that we have just this in the middle ending -*ire*, whose final vowel is surely the final -*e* that has spread to all present and perfect middle forms in Sanskrit. The fact that, aside from Vedic forms like *duduhré* and *tatasré*,[6] we have only -*ire* and never -*ure* suggests that we are dealing here with IE ǝ.[7] Vedic *duduhré, tatasré*, etc. would then show loss of the laryngeal between consonants, as in Skt. *dadmás, dadhmás*.

Although in Homer the aspiration is confined to the 3d pl. middle, we may reasonably infer that it had once been present in the corresponding active form also. For it is clear that originally the perfect was indifferent to voice, and consequently the Greek 3d pl. active, as well as the middle, is an innovation for the old indifferent form with IE ending -*ēr* or -ʙr/ǝr/r.

Even so it is not likely that the later Greek perfect with aspiration throughout developed from the third plural alone, especially since the forms in -*αται* are not recorded in Attic, where the type πέπομφα is most common.[8] Fortunately we have for the active perfect a source of aspiration for which there is clear evidence in the Hittite 1st sg. ending -*ḫḫi* < IH -*xa*. The 1st sg. active πέπομφα would regularly result from IH *pepomp-xa*[9] (cf. Hitt. *spand-ḫḫi*, written *ši-pa-an-da-aḫ-ḫi*). If, then, Greek inherited aspirated perfect forms in 1st sg. and 3d pl., it is no longer surprising that the ambiguous forms to which Osthoff called attention led to a spread of the aspiration through the remainder of the perfect system.

[6] Whitney, Sanskrit Grammar 287, §798a. Cf. Edgerton, LANG. 10.243 and fn. 2.

[7] Av. *vaozirǝm* (3d pl. plup. middle of *vaz-* 'travel') also points to IE ǝ, since IE ʙ appears as *a* in Avestan.

[8] This does not amount to proof. Attic πεπόμφᾱσι may be older than πέπομφα, and prehistoric Attic may have had *πεπέμφαται.

[9] This suggestion I owe to Sapir. On the Hittite *ḫi*- conjugation, see Sturtevant and Bechtel, LANG. 14.10–9.

It is not particularly surprising either that Homeric Greek presents a 1st sg. κέκοπα with the -π- of the 3d sg., or that Indo-Iranian has generalized the unaspirated stem-final, which occurred regularly under certain conditions in the 3d pl. and which was the sole inherited form elsewhere, except in the 1st sg. All the more impressive is the single Iranian form with IE aspiration that Holger Pedersen[10] pointed out years ago, namely Av. *hušvafa* 'has slept' beside Skt. *svápimi*. The fact that this form is of the third person does not seriously weaken its evidential value; it merely shows that the aspiration spread to this person as in Gk. πέπομφε.

It may seem strange that there are no Greek dental stems with aspirated perfects except those whose stems show the final θ elsewhere, such as πέποιθα beside πείθω. The explanation seems to be in part that these stems had no forms with an ambiguous dental mute; such a pair as ἔσκαψα : ἔσκαφα formed a much better bridge than such a pair as ἔπεισα : πέποιθα. Furthermore dental stem perfects are comparatively rare; the few formations like ἐδηδώς, κέκηδα, κέχοδα, ὄδωδα, οἶδα, and πέπορδα are less strange than labial-stem perfects like λέλοιπα and σέσηπα or than guttural-stem perfects like κέκριγα, πέπηγα, πέφευγα, πέφρικα, τέτηκα, and τέτοκα.

[10] KZ 39. 253. Now that we see the justification for the aspiration, we need not share the scepticism of Brugmann-Thumb, Griech. Gramm. 375 and of Schwyzer, Griech. Gramm. 772.

Παν-COMPOUNDS IN EARLY GREEK

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[Merely determinative compounds, though common in many modern IE languages, represent a rare type in Primitive IE. Of the few Greek examples found as early as Homer, adjectives with παν- are the most characteristic. Their secondary origin from regular 'exocentric' types can still be traced in the epic. This is typical for the development of determinative composition in general, in Greek as well as in other IE languages.]

Compounds such as πάνσοφος 'very wise' represent a rare type: an adjective as second element whose meaning is determined by the first. The farther back we go into the history of Greek, the fewer instances of this type we find; and in Homeric Greek, as far as I can see, παν- compounds are nearly isolated. Thus, an intimate consideration of that group in Homer may help to clear up the origin of merely determinative word-composition, which has become so common in modern IE languages as to supersede almost completely the inherited types of possessive, hypostatic, and verbal compounds.

If we list all Homeric adjectives composed with παν-, we get the following clearly distinguished groups.

1. παναίολος 'shot with many colors, glancing'
   πανάπαλος 'all-tender'
   παμμέλας 'all-black'
   παμποίκιλος 'all-variegated'

2. πανάποτμος 'all-hapless'
   παναφῆλιξ 'completely severed from companions of his own age'
   παναώριος 'doomed to an untimely end'

3. πάμπρωτος 'the very first'
   πανυπέρτατος 'highest of all, farthest from land'
   πανύστατος 'last of all'

4. πανάργυρος 'all-silver'
   πάνδωρος? 'all-bounteous'
   πάγχαλκος 'all-brazen'
   παγχάλκεος 'all-brazen'
   παγχρύσεος 'all-golden'

5. πανδήμιος 'belonging to all the people, public'
   πανημέριος 'all day long'
   παννυχ(ι)ος 'all night long'
   πανομφαῖος? 'sender of ominous voices'
   πανόψιος 'all-seen'

6. πάναγρος 'catching all'
   πάναιθος? 'all-blazing'
   πανδαμάτωρ 'all-subduer'
   πάνορμος 'always fit for mooring in'

The first three groups belong to the determinative πάνσοφος type; the rest are examples of the regular so-called 'exocentric' classes: possessive or bahuvrīhi compounds such as πανάργυρος, hypostatic formations such as πανημέριος (beside πανῆμαρ), and forms connected with a verb like πανδαμάτωρ or, perhaps, πάναιθος. Παγχρύσεος and παγχάλκεος seem ambiguous as to their structure; but πάγχαλκος shows us that παγχάλκεος was originally not a compound of πᾶς and χάλκεος, but derived from χαλκός—it has a 'compositional suffix' which makes it a metrically useful variant of πάγχαλκος. The parallelism is not different from that which exists between ἔννυχος and ἐννύχιος.

There is no doubt, however, that it was from παγχρύσεος, παγχάλκεος, or similar ambiguous forms that the first group of determinative παν-compounds has got its prefix. This group is semantically very close to παγχαλκ(ε)ος, and furthermore to πάναιθος, πανόψιος, etc., which are all used of armor or weapons. Its most common representative is παναίολος, an epithet of ζωστήρ, σάκος, θώρηξ, which shares with παγχάλκεος, according to the common prosodic scheme, the preference for the position preceding the bucolic diaeresis. The same is true of παμποίκιλος; the sporadic formations παμμέλας and πανάπαλος belong to the same semantic sphere.[1]

At any rate, this semantic distribution as well as other criteria makes us believe that the classical explanation of the πάνσοφος type cannot be unrestrictedly sound, according to which παν-, as a neuter singular, adverbially employed, has joined by simple juxtaposition the adjective to be determined.[2] It may a priori be suspected that this assumption is somewhat anachronistic. For in archaic Greek, adverbs are to be

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[1] It seems that also παμφαίνων, παμφανόων (where παμ- represents the 'full' reduplication of the verbal stem φαν- [*bhan-bhan-]) were associated with the παν-adjectives in question. See E 294-5 ἀράβησε δὲ τεύχε᾽ ἐπ᾽ αὐτῶι / αἰόλα παμφανόωντα (cf. παναίολος!), and several other passages, where those participles—and sometimes also finite forms (e.g. Λ 30)—are used in connection with armor: Ξ 9-11 σάκος ... χαλκῶι παμφαῖνον, etc.

[2] See also Schwyzer, Griech. Gramm. 1.437.

construed most closely with the verb, and it must be regarded as an exception if they are used to determine an adjective, as is μάλα.[3] For the alleged adverb (or 'inner accusative') *πᾶν such an exceptional function cannot be proved. Πάμπαν, which replaced *πᾶν as an adverb already in the preliterary period, occurs in Homer in 35 different passages scattered all through the poems. It refers to a verb, as adverbs chiefly do, e.g. in T 334–5 ἤδη γὰρ Πηλῆά γ'ὀίομαι ἢ κατὰ πάμπαν / τεθνάμεν, and has a decided preference for negative verbs (e.g. ξ 149 ἐπειδὴ πάμπαν ἀναίνεαι) or negative sentences (γ 143 οὐδ' 'Αγαμέμνονι πάμπαν ἐήνδανε and the like). In four or five cases such a sentence contains also a privative adjective, so as to result in a kind of litotes (e.g. N 761 τοὺς δ' εὖρ' οὐκέτι πάμπαν ἀπήμονας οὐδ' ἀνολέθρους); and there is no doubt that only because of this background phrases such as γ 348 ὥς τέ τευ ἢ παρὰ πάμπαν ἀνείμονος ἠὲ πενιχροῦ; υ 140 ὥς τις πάμπαν ὀιζυρὸς καὶ ἄποτμος[4] are found twice in the Odyssey. Here the adverb, to be sure, is closely construed with the adjective; but in my opinion it is essential that the latter, owing to its negative sense and compound structure, is distinguished from common adjectives by a somewhat verbal-like feature. I can see no chance, however, of explaining the παναίολος group that way. Before two words are united under the same accent so as to form a juxtaposition, they must have been used as a common syntactical phrase (Διὸς κοῦροι > Διόσκουροι); and we do not have the slightest indication that a phrase like *πᾶν αἰόλος, *πάμπαν αἰόλος could have existed in Homer.

It appears quite clear, on the other hand, that such an origin is not only not excluded, but highly probable for the second group. Our last example, υ 140, perhaps even marks the very point of transition. Roughly speaking, the trend runs from πάμπαν ἄποτμος to πανάποτμος, and hence to the closely related παναώριος, παναφῆλιξ, although the actual development may have been more complex.[5] The poet of the

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[3] Not sufficiently emphasized by Monro, Hom. Gramm.[2] 128. Brugmann's examples (Die Syntax des einfachen Satzes 121–2) do not prove the contrary. A large part of them are of recent and independent origin in the various IE languages.

[4] γ 348 is still influenced by the governing negative sentence. Even in N 111 ἀλλ' εἰ δὴ καὶ πάμπαν ἐτήτυμον αἴτιός ἐστιν there is neither *πάμπαν ἐτήτυμος nor *πάμπαν αἴτιος, but the two adverbial words (not unlike οὐ πάμπαν) emphatically combined refer to αἴτιός ἐστιν, a rigid verbal formula, which occurs many times at the end of the hexameter. See Γ 164 οὔ τί μοι αἰτίη ἐσσί· θεοὶ νύ μοι αἴτιοι εἰσιν, and elsewhere.

[5] The creation of the παναίολος group may have preceded and supported this development.

Demeter-Hymn already uses πανάφυλλος 'quite bare of foliage'; and in later periods privative παν-compounds are most common.

I must refrain from pointing out how later on the mass of determinative παν-compounds coalesced from these two groups, the παναίολος and the privative group.[6] In Homeric Greek, as we have seen, they are, in spite of the metrical advantages they offered, little enough developed to allow us still to trace their origin, which is typical for the origin of a large part of determinative composition in general. I should like to stress one of those typical features still from another point of view.   In the crucial word, be it παγχάλκεος or some unattested pattern of identical structure and related significance, παν- is undoubtedly the phonetically altered stem of παν(τ)-. This form of the prefix may have been generalized either from anteconsonantal position, or under the influence of the neuter in πανῆμαρ, πανημέριος and, perhaps, πανδαμάτωρ. Accordingly, παν- in παγχάλκεος, as in all other exocentric παν-words, still means 'the whole': the ἄορ is παγχάλκεον (θ 403), i.e. the entire sword is made completely of bronze. But as early as in words like παγχάλκεος such a concrete significance could easily shift towards the more emotional and at the same time more abstract function of a mere strengthening prefix. I doubt whether in the case of N 552 οὔταζον σάκος εὐρὺ παναίολον, compared with Π 107 ἔμπεδον αἰὲν ἔχων σάκος αἰόλον, παναίολον refers expressly to the totality of the shield, or is rather a stronger variant of αἰόλον. When, later on, after the fusion of the παναίολος and the privative group, abstract words such as πάνσοφος are coined, the latter interpretation is the only possible one. This emotional component, now, seems to be an important prerequisite—I do not venture to say, the very motive—of the structural change from exocentric to determinative composition, in Greek as well as in other IE languages. Very often it is an emotional prefix—strengthening, diminishing, flattering, praising, or deprecating—which results from an originally concrete first compositional element, while the structure of the compound as a whole becomes determinative.[7]

The third group of our list, which did not develop very much further in later periods, remains always apart from the other groups. It is characterized by the second compositional element's being a superlative, or a similar form, whereas the prefix evidently represents a genitive: πάμπρωτος 'the first of all'. Possible parallels in other languages cannot solve the difficulty that we have here another instance of determinative

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[6] And, probably, from others, non-Homeric, or unattested.
[7] See my remarks, Rendic. Istit. Lomb. 70, Lettere 270, 273-4.

compounds.   I hope to occupy myself with this question upon another occasion.

	Exocentric		Determinative	
IE	Inherited types			
Homer	πανημέριος, etc. πανδαμάτωρ, etc. πάγχαλκος, etc. παγχάλκεος	→ παναίολος παμποίκιλος παμμέλας πανάπαλος	[οὐ πάμπαν ... οὐ π. ἄποτμος π. ἄποτμος] ↓ πανάποτμος παναώριος παναφῆλιξ	πάμπρωτος, etc.
Hymns			πανάφυλλος	
Later Greek			πάνσοφος type	

Another class of determinative παν-words deserves a brief mention: the national names Πανέλληνες, Πανάχαιοι. They are a Homeric problem κατ' ἐξοχήν, since other nouns of that kind do not appear in the tradition until the first century A.D.[8] The question of their exact meaning with its historical aspects has often been discussed, and I do not intend to settle it by a mere formal linguistic decision. I would only point to a hitherto neglected circumstance. The two names are not the only compound national names existing in the epic; apart from several mythic ethnika we have still 'Ετεόκρητες. The structure of this name is the same as that of Πανέλληνες, Πανάχαιοι. As F. Sommer pointed out, 'Ετεόκρητες is a denomination which is due to the ambiguous meaning of the simple Κρῆτες.[9] When it was necessary, for some reason, to distinguish the autochthonous Cretans from the Greek ones, a technical term such as 'Ετεόκρητες was needed. Exactly analogous is the case of "Ελληνες, 'Αχαιοί. It is commonplace knowledge that both

[8] See Schwyzer, Griech. Gramm. 1.80.

[9] Abh. Bayer. Akad. Wiss., Philol.-Hist. Abt., NF 9.25[1].   See also Frisk, Indog. Forsch. 52.285–6.

terms are used in a narrower meaning (designating a tribe) as well as in the general meaning 'Greeks'.[10]   It cannot be by mere accident that just these two ambiguous ethnika can be determined by a prefixed Παν-. A necessity of technical character has led to the use, in an exceptional case, of an exceptional form of noun-composition. Πανέλληνες in Homer would indeed mean something like πάντες "Ελληνες— originally, however, not in contrast to any other tribe of the Greek people, but only in contrast to the "Ελληνες of the little north-Greek 'Ελλάς. The form of the prefix Παν- would be due to the other παν- compounds.

[10] For "Ελληνες, only the narrower significance is found in Homer.   The above interpretation presupposes that 'Ελληνες already meant 'Greeks' before Πανέλληνες was formed, and that the simple word is not a retrograde derivative from the compound (see Miller, RE 8.158-9).   Nevertheless the 'Ελληνες might well have got their strange accentuation (cf. the other names in -ᾱνες) from Πανέλληνες; see Kretschmer in Einl. i. d. Altertumswiss. 1³.6.67.

TENSE AND AUXILIARY VERBS
WITH SPECIAL REFERENCE TO SLAVIC LANGUAGES

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[The Slavic languages, with the exception of Bulgarian, in contrast
with the languages of western Europe, have preserved the IE nominal
inflection but have simplified the verbal system. Russian has gone
farthest in this direction. Original auxiliaries in Russian have become
particles; all finite verb forms except those of the present tense have
been replaced by nominal or participial constructions.]

A comparative study of the morphology of IE languages and more
particularly of living European languages shows that modern Euro-
pean languages of the inflecting type have not maintained the com-
plexity and richness of the primitive IE morphology. One group of
languages has reduced to a minimum the forms of declension, while pre-
serving and even enlarging the system of the verbal flexion; another
group of languages has considerably simplified the verbal flexion, while
preserving and even developing the declension. To this latter type
belong the East Slavic languages and particularly Great Russian. The
formula given above is to be considered, of course, as a general tendency,
admitting a series of transitional types like the modern South Slavic
and West Slavic languages.

A series of linguistic facts taken from different modern IE languages
seems to justify our division into essentially 'verbal' and essentially
'non-verbal' languages. Thus the Romance languages have lost the
declension of nouns completely and that of pronouns almost completely,
but have developed a system of grammatical tenses which is richer than
the Latin tense system. In addition to the Latin present, imperfect,
perfect, and pluperfect tenses they have formed a new past tense (the
French passé simple, Spanish pretérito anterior, Rumanian-Wallach
aorist). We find the same phenomenon in modern Germanic languages
like German or English. Literary German has three past tenses and
two futures, English makes use of six past tenses (*he said, has said, had
said, was saying, has been saying, had been saying*) and of four futures
(*he will say, will have said, will be saying, will have been saying*).[1] It is

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[1] Cf. the locution *is going to say* with future meaning.

clear that the modern West European languages do not indicate the
tenses simply by means of the change in the form of the verb itself (i.e.
by means of augmentation, reduplication, ablaut in the verbal stem, or
the addition of one simple suffix).[2] The development of grammatical
tenses in these languages is in close connection with the development of
the use of periphrastic and abstract auxiliary verbs.[3] The modern
Slavic languages make use, as we shall see, of considerably fewer aux-
iliaries and have correspondingly fewer grammatical tenses. They
have conserved, however, the principle of the IE declension much better
than Germanic or Romanic.   It is noteworthy that Bulgarian, the only
Slavic language which has almost completely lost its declension, pos-
sesses at the same time the richest system of tenses.   It belongs, as it
were, to the Western European type.

We may conclude that modern European languages of the inflecting
type tend towards an abolition of one type of flexion in favor of the
other.   There is apparently an opposition between declension (system
of cases) and conjugation (system of tenses).   It is our purpose here to
attempt to throw some light on the development of Slavic languages
with reference to the means at their disposal for tense indication.

The Slavic languages have inherited in all its details the Proto-Slavic
verbal system, a highly developed system of grammatical tenses.   In
Old Russian (OR) of the date of our earliest texts, the Proto-Slavic
verbal system seemed to exist unaltered.   The OR verbal system con-
sisted of five participles and eight inflected formal categories: (1) Pres-
ent; (2) Future, found only in imperfective verbs as a combination of
the infinitive with one of the auxiliary verbs *búdu* 'I shall be', *xočú* 'I
want to', *imú* 'I shall take', *učьnú* 'I shall begin';[4] (3) Imperfect; (4)
Aorist; (5) Perfect; (6) Pluperfect; (7) Future perfect; (8) Conditional.
All finite forms with the exception of the present (and perfective future),
imperfect, and aorist were formed by means of periphrasis, i.e. they
were syntactical paradigms.

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[2] In Romanic, German, English, etc., no distinction in method of formation
must be made between the forms with suffix or ablaut and those which are 'syn-
tactically paradigmatic'.   The forms *I saw* and *I have seen* obviously fall into
different morphological categories, but syntactically they fall into the same
category, i.e. they are both tenses.

[3] Auxiliary verbs do not only serve for tense formation.   In French, Spanish,
Italian, English, and German the complete passive in all its tenses is formed by
means of auxiliary verbs.

[4] The variable usage of the auxiliary in the formation of the OR future is much
the same as English *I shall come* and *he will come*, both forms indicating a time.
Therefore the OR and OCS compound future is a real tense.

It is doubtful whether the imperfect was still a living form in the OR colloquial language at the time of our earliest sources.[5] It is absent in the genuine OR sources dating from the 12th century, but we still find it in the language of the OR Chronicles, of which the earliest copies date from the 14th century. However, that the imperfect was not always foreign to OR is clear from the fact that its forms underwent changes between the time of Proto-Slavic and our earliest texts. Instead of those forms which we find in Bulgarian Church Slavonic (e.g. *nesěaxъ* 'I was carrying'), we find in Russian CS copies such forms as *nesěxъ* or *nesäxъ* with vocalic contraction (cf. *bäše* 'he was' IS 1076, *idäše* 'he was going' AG 1092, etc.). In addition, we find instead of the expected forms *nesěaše* and *nesěaxu* 'he was, they were carrying', the terminations *-äšetъ*, *-äxutъ* with the suffix *-tъ*. This suffix in the 3d person is typically Russian and is otherwise to be found only in the present, whence it was transferred to the imperfect by analogy. We find such forms as early as the 11th century, e.g. *nuždašetъ* 'he was needing' OG 1057. Since in the earliest period we find the imperfect only in CS texts and not in the language of the genuine OR sources (contracts, deeds of sale, etc.), we can conclude that it was a tense form confined to a higher literary style and lacking in colloquial language.[6]

The form of the aorist evinced a higher degree of persistence and remained part of the living language in Moscow up to the 15th cen-

[5] Our only sources for the study of OR morphology are mistakes in Old Church Slavonic (OCS) texts copied or written in Russia. The most important texts of the earliest period are: The Ostromir Gospel (OG) 1056; Izbornik Svyatoslava (IS) 1073, 1076; The Archangel Gospel (AG) 1092; Menaeae of Novgorod 1095–97; The Mstislav Gospel (MG) 1117. A full list of texts is to be found in N. Durnovo's Vvedenie v istoriŭ russkogo äzyka, 1.32–97 (Brno, 1927).

Having no access to the originals and to the most important editions of texts, I have quoted the examples mainly from Sobolevskij's book Lekcii po istorii russkago äzyka (St. Petersburg, 1891).

NOTE ON TRANSCRIPTION. There is no one accepted system of transcribing the Cyrillic alphabet. We have chosen the simplest possible transliteration, using the Cyrillic letters ъ and ь in all places where they appear in OR or in modern Russian. Russian possesses special letters for *a* and *u* with palatalization of the preceding consonant, which were pronounced *ja*, *ju* in initial position; we transcribe them *ä*, *ü*. The Russian letter usually transcribed *šč* is reproduced by *ç* in accordance with the principle: one Roman letter for one Cyrillic.

[6] There are in other languages numerous examples of the use of certain tense forms only in fine writing: the French passé simple (e.g. *vous allâtes*) is lacking in colloquial; in Southern German (Vienna) imperfect forms like *er sass*, *du assest* are only written and hardly ever used in spoken language; in modern Serbo-Croat the aorist is used as a literary device and is not to be found in standard colloquial speech.

tury. It is not until the Gennadius Bible (1499) that we meet with examples which indicate that the aorist was no longer understood, e.g. *my na koněxъ ězdäxu* 'we rode on horse-back', where the 3d pl. ending *-xu* is used after the 1st pl. pronoun *my*. Such errors show that even people who were well acquainted with Church Slavonic and who therefore must have known the aorist not only in Russian but also in CS, had no longer any proper notion of the use of this form. They used the aorist merely as a conscious archaism in contexts where they felt it to be fitting.

It was possible for both the imperfect and the aorist to disappear because a third past tense, the perfect, could function in their place. This happened in most Slavic languages: in modern Polish, Czech, Slovak, Wendic, and Slovene. But in Russian the perfect exhibits a type of development which is paralleled in no other Slavic language. The perfect was formed in Slavic by means of the past participle in *-lъ* together with the inflected present forms of the auxiliary verb *býti* 'to be'. While all the other Slavic languages in principle maintain this formation, in Russian the auxiliary verb has disappeared entirely. In order to understand the formation of the modern preterite construction in Russian, it is necessary to outline briefly the history of the auxiliary *býti*.

The inflected forms of the present of the auxiliary *býti* 'to be' could function in OR as a copula. But in modern Russian the copula has disappeared entirely, resulting in sentences to which we would apply Leonard Bloomfield's term 'equational predications', such as *soldát xrabr* 'the soldier (is) brave' or *otéc dóma* 'father (is) at home'. The 3d sg. of the auxiliary *býti*, *estъ* 'is', has undergone a change in meaning. We read in the Moscow Chronicle (1525), *u nasъ knígi i právila estъ* 'here (lit. by us) there are books and rules'. In the 13th century it would have been necessary to have instead of the singular form *estъ* the 3d pl. form *sutъ*, governed by the plural forms *knígi* 'books' and *právila* 'rules'. The word *estъ* retains the meaning 'there is, there are' in modern Russian, e.g. *v lesú estъ gribý* 'in the wood is (= there are) mushrooms'. Thus *estъ* has lost its verbal character; it has become an impersonal particle.[7] In this function it is used to express the meaning 'to have',

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[7] By verbal character we mean inflecting forms which indicate person and number. In the case of *estъ* both these characteristics are lacking. Moreover, the form *estъ* itself may be omitted, e.g. *u bráta děnъgi* 'the brother has money'. In present-day Russian, equational predications are the only possibility. Only in newspaper or scientific language do we find *estъ* and less frequently *sutъ* 'they are' used as a copula. This, however, is to be ascribed to the influence of translations from Latin, French, and German.

'to possess': e.g. *u bráta estъ dénъgi* lit. 'by brother there is money' =
'the brother has money'.

So far we have treated only sentences without the copula in the 3d
person. In the 1st and 2d persons the disappearance of the copula
could not take place so easily. In all Slavic languages the flexional
suffix of the verb indicates the person, as in Latin: Serb *piš-em* 'I write',
piš-eš 'thou writest', etc. In the same manner the person was indicated
also by the forms of the auxiliary verb *býti*, e.g. *esmъ* 'sum, I am', *esi*
'es, thou art', etc.[8] These forms were used without pronouns. There-
fore in a sentence like *xrabrъ esi* 'brave (thou) art' the auxiliary verb
could not very well disappear, since the sentence *xrabrъ* would become
completely incomprehensible. Originally, OR avoided the use of the
personal pronoun of the 1st and 2d persons. Exceptions were made
only in two cases: (a) If a contrast was to be expressed, e.g. *aςe odolěeši
ty, to vozъměšъ iměnie moé, aςe azъ odolěu, to vozъmú iměnie tvoé* 'shouldst
THOU conquer, then (thou) takest my possessions; should I conquer,
then (I) take thy possessions' (Laurence Chronicle, 14th century copy).
(b) In cases of apposition, e.g. *se azъ Mstislavъ povělělъ esmъ*[9] 'this
have I, Mstislav, commanded'. But in a Riga document (1300) we
already find *my xóςomъ bógu žalovati sä* 'we wish to complain to God',
where the pronoun *my* appears together with the verb, although *xóςomъ*
already expresses quite unambiguously 'WE wish'.[10] The use of the
pronoun thus renders possible the disappearance of the copula also in
the 1st and 2d persons. The process can be formulated thus: (1) *xrabrъ
esi* 'brave art'; (2) *ty xrabrъ esi* 'thou brave art'; (3) *ty xrabr* 'thou brave'.

This change, which at first affected only the verb *bytъ*, shook the
whole verbal system. Equational predications were extended to the
forms of the perfect. Originally this was composed of the past parti-
ciple plus the inflected forms of *býti* 'to be' : *dalъ esmъ* 'I gave', *dalъ esi*
'thou gavest', etc. Already in the Yuriev Gospel (1120) we find the

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[8] The copula of the 1st and 2d persons is not of OCS origin, it is native to
Russian, as witness the folk song formulae *oj ty goj esi, vy dóςeri esté* 'you are the
daughters', and Ukrainian *dóbre esi* 'thou art good'. Furthermore, the fact that
the 1st and 2d pl. forms of the auxiliar *býti* have been subject to considerable
variations in medieval Russian, proves that these forms were not borrowed from
OCS, but were original OR forms; cf. 1st sg. *esmъ* and *esmí*, 1st dual *esvě, esvá*,
and *esmá*, 1st pl. *esmъ, esmý, esmó, esmé*, and *esmá*.

[9] OR texts use almost indifferently the OCS form *azъ* and the genuine OR form
á for the 1st sg. pronoun 'I'.

[10] Cf. L. Bloomfield's remark (Language 439) 'in English and in German, forms
like *sing, singest, singeth* have come to demand an actor, although there is no
homonymy.'

formula *Ugrinъcъ psalъ* 'Ugrinits wrote (this)' without auxiliary in the
3d person.   In the course of the 12th century these forms became more
and more frequent.   For the 1st and 2d person the auxiliary *esmъ*,
esi, etc., continued to be used in the perfect until the 13th century.   But
already in the Riga document (1300) we find forms without auxiliary:
ty emú ne dalъ 'thou gavest him not'.   Today the form of the perfect,
which is the sole remaining preterite in Russian, is used without the
auxiliary.   The process may be again formulated in the following way:
(1) *dalъ esí*; (2) *ty dalъ esí*; (3) *ty dal.*

The personal suffixes, the factor which above all others characterized
the verbal flexion of IE languages, disappeared completely from the
Russian preterite.   There remained only a distinction of numbers
(singular and plural) and in the singular a distinction of gender.   Thus
the Russian preterite construction can be compared with the adjectival
or pronominal constructions; cf. *ty mil* 'thou art nice, masc.', *ty milá*
'idem, fem.' *ty sam* 'thou art alone, masc.', *ty samá* 'idem, fem.', *ty dal*
'thou gavest, masc.', *ty dalá* 'idem, fem.'[11]

The forms of the preterite were not the only ones which were con-
structed with the aid of auxiliary verbs.   In this connection we must
consider also the pluperfect, the future perfect, and the conditional.[12]

Originally, the use of the pluperfect was completely regular, as in
Latin or present-day English.   Morphologically it was a combination
of the imperfect form of the auxiliary *býti* with the past participle in
-lъ.   But as the imperfect had already disappeared before the period
of our texts, the imperfect form of the auxiliary had to be replaced by
the perfect *bylъ esmъ*.   Thus we read in the Riga document (1300):
prigotóvili sä esmé býli 'we had prepared'.   Gradually these forms
acquired a secondary meaning.   They indicated an action which was
interrupted and rendered ineffective by some other action, e.g. *ä velělъ
bylъ ixъ sudíti, a nýniči esmъ ixъ pomílovalъ* 'I had (originally) ordered
them to be tried, but have now pardoned them', from a Moscow MS
1455–62.   The form of the pluperfect ceased to indicate tense and began
to express a mood.   The inflected auxiliary was replaced by the 3d sg.

[11] That it is not a question of a mechanical disappearance of *esíъ* in all positions
is clear from a consideration of Czech, where equational predications are not
found, but where the 3d sg. and pl. perfect forms occur without auxiliary: *on
přišel* 'he came'.

[12] These forms do not only occur in literary language influenced by OCS (such
as ecclesiastical texts), but also in genuine secular documents, such as deeds of
sale, and in the language of officialdom, where the influence of OCS is at a
minimum.

neuter form *býlo*, which became an impersonal particle. This particle can now be used not only in connection with verbs, but also with declined participles. Thus *býlo* can no longer be considered as a paradigmatic verbal form: it has lost its connection with the verbal system.[13]

The future perfect consisted of the past participle in *-lъ* plus the auxiliary verb *búdu* 'I shall be'. But the fut. pf. received at quite an early date a modal coloring and came to indicate an activity to be expected. Furthermore, it was chiefly used in conditional sentences, e.g. *kto búdetъ náčalъ, tomú platíti* 'he who shall have begun (the quarrel), shall pay'. From the 15th century on these forms no longer indicate a future perfect (a tense), but a mere possibility (a mood). Again the 3d sg. is given a general function, so that it need not agree with the subject of the sentence; the participle in *-lъ* is replaced by a perfective present tense form, e.g. *a búdetъ my učnémъ* 'and should we begin'; and finally, *búdetъ* lost its personal suffix *-tъ* and appears today with the meaning 'in case', particularly common in the language of officialdom: *búde okážetsä vozmóžnym* 'in case it should be possible'. Thus another Slavic tense developed in Russian into an impersonal particle.

Apart from the indicative forms already dealt with, the only remaining finite form to be treated is the conditional. It was a combination of the past participle in *-lъ* plus the inflected form of the conditional of the auxiliary 'to be', *byxъ, by, by*, etc. But errors in its use are frequent at an early date, e.g. *áçe by slěpy býli* 'if they were blind' (1333), instead of the correct form *býša slěpy býli*. The forms of the auxiliary no longer agreed in number and person with the subject. Briefly, this is yet another example of the process already noted, whereby one form of the inflected auxiliary is chosen and thus becomes an impersonal particle with no verbal character. This particle *by* was united with other particles and thus gave rise to *čtóby* (or *čtob*), *dabý* 'in order to' and *kabý* 'if'. It has a parallel form consisting of one consonant only (*ésli by* and *ésli b* 'if only'). The former paradigmatic conditional thus lost the last traces of its finite character.[14]

We have demonstrated how Russian has gradually lost all its inflected forms (tenses), viz. the impf., aor., pluperf., fut. perf., and condit. The

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[13] The form *á dal bylo* means in modern Russian 'I had originally intended to give' and no longer 'I had given'. The particle *bylo* can now be used even with declinable participles, e.g. *on razbudíl zasnuvšego* (acc.) *bylo továriça* 'he woke the comrade who had been sleeping for a little while'.

[14] Cf. expressions like *pobólъše by* 'more would be desirable' and *vódki by* 'some vodka would be a good thing', where the particle *by* is combined with an adverb and a noun.

only finite form of the modern Russian verb is the present. But the existence of nominal sentences and equational predications in Russian makes it possible to render even the present without a verb, e.g. *nočь* 'it is night' and *otéc dóma* 'father (is) at home'. It is interesting to note that the imperative also has partly lost its connection with the verbal system. The imperative admits an accumulation of two personal suffixes (*pojd-ëm-te* 'let us go', politely). It has also altered its syntactical function, indicating not only a command or a prohibition, but a conditional (e.g. *pridí ä na čas ránьše* 'if I had come an hour earlier') and an unexpected action (*a sobáka egó vozьmí da ukusí* 'and the dog bit him suddenly'). It is noteworthy that again there is no agreement between the 2d sg. form of the imperative and the subject (*ä* 'I', *sobáka* 'dog').

It cannot be denied that the reduction of the Russian verbal system to a minimum reveals a certain regularity. Other Slavic languages have also considerably reduced their tenses, but none has gone as far as Russian. It is evident that Russian has departed more and more from what we have called the 'verbal' type.

We interpret the general tendency towards the reduction of the verbal system in Russian by the disappearance of the auxiliary verbs in this language. Other European languages make a formal distinction between auxiliaries and full verbs. Thus, in Serbian there are verbs which are used enclitically after the first stressed word of the sentence: *mislio sam* 'I thought', *misli-ću* 'I shall think'. These enclitic verbs are used for tense indication only (perfect and future). In German there are many modal auxiliaries which differ morphologically from all other verbs by having a special formation of the past participle without the prefix *ge-*: *du hast es sagen wollen, dürfen, müssen, mögen, können, sollen, lassen,* etc. English has a category of verbs marked by several morphological characteristics, such as the lack of the 3d sg. ending -*s* in the present (*he must, can, should, will, need, dare*), by the construction of the interrogative and negative forms without *to do* (*mustn't, couldn't, shan't, won't, needn't,* etc.). Briefly, auxiliary verbs are in these languages not only functionally but also syntactically a special category. No such category exists in modern Russian. Russian has abolished all compound tenses formed by means of auxiliaries.[15] Instead of tense and modal auxiliaries we have impersonal constructions, e.g. *mne*

[15] The future form of imperfective verbs *ä búdu pisátь* 'I shall be writing' is in no way distinct from or opposed to such forms as *ä stánu pisátь* 'I am going to write' or *ä sádu pisátь* 'I shall sit down to write'.

móžno 'to me allowed, I may', *mne núžno* 'to me necessary, I have to', *mne nádo, nádobno* 'to me necessary, I must', *mne neĺzä* 'to me not allowed, I must not'.   Such verbs as *ä xočú* 'I want to' and *ä mogú* 'I can' are not formally differentiated from any other Russian verb; both of them have parallel impersonal constructions, *mne xóčetsä* 'to me it wills', *mne možno* 'I may'.   Serbo-Croat has at least two auxiliary verbs for tense indication (the present of *biti* and *ću*);[16] Slovene forms the perfect, the pluperfect, and the future with the aid of the auxiliary verb *biti* used enclitically (*dal sem, dal sem bil, dal bom*);[17] Czech makes use of auxiliaries in the formation of the perfect, the pluperfect, the imperfective future, and the conditional, etc., and has in addition borrowed the German auxiliary *müssen* > *musím*.   All these languages make a larger use of the verb 'to have, to possess' (SCr. *imati*, Slov. *imeti*, Cz. *míti*, Pol. *mieć*) than Russian, which instead uses impersonal constructions, e.g. *u menä estъ* 'by me there is, are'.[18]

Russian has, of all Slavic languages, the poorest system of grammatical tenses (i.e. present, preterite, and future).   At the same time it is the richest language in case endings.   In addition to the nom., acc., dat., gen., instr., and prepositional, it has developed two cases unknown to Proto-Slavic, the partitive and the locative.   The latter, it is true, appear in a restricted group of words, but they are nevertheless 'paradigmatic'.   Thus we find a partitive in all masc. words meaning a material, even in recent loan-words, which shows that the category is productive in Russian; e.g. *tablétki aspirínu* 'aspirin pills', *daj mne púnšu* 'give me (some) punch'.   The partitive ending *-u* is different from the genitive ending *-a* (e.g. *stakán čáju* 'glass of tea' versus *vkus čája* 'taste of tea').   The forms of the locative in *-u*, used after the prepositions *v* 'in' and *na* 'on', occur not only in genuine Russian words, but also in modern loan-words, such as *v portú* 'in the port', *na postú* 'on (his) post', *na bortú* 'on board'.   This richness in cases is counterbalanced by the poverty of the tense system.   The opposite phenomenon is observed

[16] On the other hand, Serbo-Croat has lost the distinction between dat. and loc. in the singular and between dat. and instr. in the plural, and has thus reduced its declension.

[17] Slovene has lost the syntactical use of the instrumental, which appears now only in combination with a preposition *s, z* 'with', *pod* 'under', *nad* 'over', etc. For the Czech cf. R. Jakobson's article Beitrag zur allgemeinen Kasuslehre, Travaux du Cercle Linguistique de Prague 6.240–88.

[18] Such sentences as *ä iméü vrémä* instead of *u menä estъ vrémä* 'I have time' are felt to be Germanisms.

in Bulgarian, where the Proto-Slavic tenses have been fairly well preserved (pres., impf., aor., pf., plupf., fut., and cond.), but where the declension has been reduced as much as in modern English. Between these two poles—of Bulgarian, a verbal language, and Russian, a nonverbal language—are ranged the other Slavic languages. None of them has as many cases as Russian or as few as Bulgarian, and none of them has a richer verbal system than Bulgarian or a poorer one than Russian. All of them make wider use of auxiliary verbs than Russian.

ON THE DEVELOPMENT OF THE STRUCTURAL USE OF WORD-ORDER IN MODERN ENGLISH

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[In the actor-action-goal construction and in the character-substance (or modifier-noun) construction, Old English used taxemes of selection (inflected forms) to distinguish between actor (subject) and goal (object), and to indicate the direction of modification. The development of English has been away from the use of taxemes of selection with non-distinctive and connotative word-order, toward the use of taxemes of order operating practically without the aid of other devices. The patterns of the Modern English use seem to have been established by the middle of the 15th century.]

'Viewed from the standpoint of economy, taxemes of order are a gain, since the forms are bound to be spoken in some succession; nevertheless few languages allow features of order to work alone; almost always they merely supplement taxemes of selection.'[1] In Present-day English, however, there are two 'grammatical forms' for which the taxemes of selection have been lost during the course of the historical development of English and the features of word-order do work practically alone.

The first of these is in the ACTOR-ACTION-GOAL construction, in which the substantive noun that forms the 'starting-point' (the so-called subject) of the action is distinguished from the substantive noun that forms the 'ending-point' (the so-called object) only by position. The difference between the sentences *The man struck the bear* and *The bear struck the man* rests solely on word-order. Such arrangements of the words as *The man the bear struck* and *Struck the man the bear* do not distinguish the starting-point from the ending-point of the action and are not the practice of Present-day English.

In Old English, however, the order of the words in such sentences has no bearing whatever upon the grammatical relationships involved. Taxemes of selection do the work, and word-order is non-distinctive and connotative. The following Old English sentences, for example, would all express the same syntactic relationships between the two substantive

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[1] Leonard Bloomfield, Language (1933) 198.

nouns: that the bear is the goal or end-point of the activity and the man the starting-point.

Sē mann þone beran slōh.

þone beran sē mann slōh.

þone beran slōh sē mann.

Slōh sē mann þone beran.

In each of the four sentences, taxemes of selection—the nominative case form for *the man*, the accusative case form for *the bear*—signal the 'subject' and the 'object' relationships.   It is true that in most Old English nouns there is no distinction of form between the nominative and the accusative; but with these nouns are used an inflected article and an inflected adjective, and these 'agreeing' words most frequently have distinct forms to separate the nominative from the accusative.   As a matter of fact, in a count covering more than 2000 instances, less than ten per cent of the Old English forms which are syntactically nominative or accusative lack the distinctive case-endings.   In respect to the actor-action-goal construction we are concerned with the shift from this grammatical situation in Old English, where taxemes of selection operate with only a non-distinctive and connotative word-order, to the grammatical situation in Present-day English, where distinctive features of word order operate without taxemes of selection.

The particular historical facts of significance for our purpose are (a) the position of those words which in Old English bear the accusative inflection—the 'accusative-object', and (b) the position of those words in Old English which bear the dative inflection—the 'dative-object'.[2] In both cases we are concerned only with those instances which do not involve the use of a preposition (function word).

(1) In Late Old English of about 1000 A.D., if the sermons of Ælfric can be taken as a fair representation of the language of that time,

[2] In examining the materials of Middle English and Early Modern English, where the distinctive inflectional syllables of both adjectives and articles have been lost, only those instances were counted as accusative-objects or as dative-objects for which there were clear inflectional parallels in Old English.   I am indebted to a number of my students for contributions to my collection of instances upon which these figures are based, and especially to Dr. Frederic C. Cassidy (The Backgrounds in Old English of the Modern English Substitutes for the Dative-Object in the Group Verb + Dative-Object + Accusative-Object, University of Michigan Diss., 1938) and to Dr. Russell Thomas (The Development of the Adnominal Periphrastic Genitive in English, University of Michigan Diss., 1931).

approximately 53% of the accusative-objects appear BEFORE THE VERB and only 47% after the verb. Typical examples are:

> *ælc man ... þe ... ðone oðerne hyrwde*[3]
> *se man ðe hine sylfne godne talað*
> *and Crist on ðære hwile to helle gewende and þone deofol gewylde*
> *se Ælmihtiga God ða dagas gescyrte*
> *gif ðu þonne ðis lytle bebod tobrecst þu scealt deaðe sweltan*
> *he ðone lyre anfealdlice gefylde*
> *and ða ylcan lare eft ge-edlæhte*

(2) The change from the Old English free position of the accusative-object (either before or after the verb) to the Modern English fixed position after the verb is indicated by the following figures:

	c. 1000	c. 1200	c. 1300	c. 1400	c. 1500
Acc-obj. before verb	52.5%	52.7%	40+%	14.3%	1.87%
Acc-obj. after verb	47.5%	46.3%	60−%	85.7%	98.13%

(3) If the sampling displayed in these figures is trustworthy, then the position following the verb had become the fixed position for the accusative-object probably by the beginning of the 15th century, certainly before 1500.

(4) In Old English the words with dative inflection, the so-called dative-objects, like those with the accusative inflection, are found in practically every position in the sentence. When a dative-object and an accusative-object appear in the same sentence, the order of these words in relation to each other and to the verb may be any combination, without doing violence to the ordinary patterns of Old English. Typical examples are:

> *Cartaginenses sendon fultum* [acc.] *Tarentinum* [dat.] (Or. 162.8)
> *þam godan casere* [dat.] *sende theodosie ærend-gewrit* [acc.] (Æl. Saints I.536.792)
> *he asende his apostlum* [dat.] *þone halgan gast* [acc.] (Wulfstan 1.230.27)
> *Hi moston him* [dat.] *beran unforbodene flæsc* [acc.] (Æl. Saints II.72.91)

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[3] The practice of Old English of putting the verb at the end of subordinate clauses (similar to that of Modern German) accounts for the position of a large number of accusative-objects before the verb.

(5) In the materials examined for Old English (900 A.D. to 1000) we find the following distribution of 2558 instances:[4]

	Dative-object before the verb		Dative-object after the verb		Dative-object before acc-obj.		Dative-object after acc-obj.	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Nouns	95	27.6	249	72.4	249	64.0	140	36.0
Pronouns	495	48.7	518	51.3	674	82.8	141	17.2
Both together	587	43.4	767	56.6	923	76.6	281	23.3

In these figures three matters seem worth noting: (a) Even in Old English the dative-object usually appears before the accusative-object. This is especially true of the pronouns, with the dative-object coming first in 82.8% of the instances. (b) The position of the dative-object with respect to the verb is less certain in Old English. Of the pronouns, approximately half appear after the verb; of the nouns, nearly three-fourths appear after the verb. (c) In the case of nouns, a much larger percentage of dative-objects appears after the verb than of the accusative-objects (72.4% as against 47.5%).

(6) The materials examined for Early Middle English (c. 1200) show (a) practically the same pattern of the position of the dative-object in relation to the accusative-object as do the materials for Old English; but (b) a clear tendency to place the dative-object after the verb. The figures for (b) are as follows:

	Dative-object before the verb		Dative-object after the verb	
	Number	Percent	Number	Percent
Nouns	26	23.0	88	77.0
Pronouns	218	43.0	288	57.0
Both together	244	39.4	376	60.6

(7) By Early Middle English the position of the dative-object in relation to the accusative-object seems to have become a clear pattern. In about four-fifths of the instances the dative-object precedes the accusative-object. As the accusative-object comes increasingly to be placed after the verb, the dative-object also appears after the verb but before the accusative-object.

(8) The general situation at approximately the middle of the 15th century seems to have been as follows.

In the actor-action-goal construction the position for words expressing

[4] Figures here summarized are from those given by F. C. Cassidy, op. cit.

the goal (the ending-point or object) has become pretty thoroughly fixed as after the verb. Accusative- and dative-objects are distinguished by the fact that the dative-object, when present, precedes the accusative-object. This positional relation of the two classes of objects had existed for several centuries. Most important is the fact that by this time no nouns functioning as accusative-objects or as dative-objects precede their verbs.[5] The position before the verb, cleared of the presence of formally distinct accusative- and dative-objects, becomes in itself the distinguishing feature of the form-class of nominative expressions. The position before the verb becomes the territory of the actor (the starting-point or subject), the position after the verb becomes the territory of the goal (the ending-point or object); both exercise the 'pressure of position' upon the function of all substantives standing in each territory.

Nouns standing before the so-called impersonal verbs as dative-objects (earlier such dative-objects had clear dative-case inflectional forms) now, whenever the verb form permits, are interpreted as subjects; and nouns following these impersonal verbs—nouns which formerly had the clear inflectional characteristics of subjects—now, standing in object territory, are interpreted as objects.[6]

> *The knight liked it right noght* (Tale of Gamelin 52)
> *This tale nedeth noght be glosed* (Conf. Am. VII.3786)
> *Whan a wolf wanteþ [h]is fode ... , of þe erþe he et* (Alex. and Dind. 860)

The 'pressure of position' can perhaps most satisfactorily account for the changes in the pronoun forms in such sentences as these:

> *Me wæs gegiefan an boc = I was given a book*
> *Hem nedede no help = They needed no help*

and the 15th-century change of verb form in an old and common expression seems also to be connected with the development of this taxeme of order as the signal for the subject:

> *Habbað geleafan ic hyt eom* (OE Gospels)
> *Wostow nought wel that it am I* (Chaucer)
> *It is I that am here in your syth* (Coventry Mysteries)

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[5] Pronouns with distinct case forms did occasionally appear as dative-objects or as accusative-objects before verbs.

[6] The examples printed by Willem Van der Gaaf in his dissertation, The Transition from Impersonal to Personal in Middle English (1904), have been of great service. See also Otto Jespersen, A Modern English Grammar 3.11.2-3₁, and C. Alphonso Smith, Studies in English Syntax 66-86.

In general, then, in the actor-action-goal construction, in respect to the distinction between actor and goal, taxemes of selection which operated in Old English without relation to word-order have been displaced by taxemes of word-order working practically alone. These taxemes of word-order seem to form a clear pattern in the 14th century and to be fully established by the middle of the 15th.[7]

[7] I have tried to describe the various aspects of the word-order pattern for the nouns of the actor-action-goal construction in the following ten statements:

(a) A single noun preceding the verb—a noun that has the full characteristics of a substantive (i.e. with possible determiners as well as inflection for number), that is not preceded by an accompanying function word, or inflected for genitive case—is the subject or the starting point of the actor-action construction.

(b) Two such nouns preceding the verb—nouns that are equivalent or refer to the same person or thing—are the subject and an appositive, the first in order being the subject.

(c) Two or more such nouns preceding the verb—nouns that do not refer to the same person or thing but which are levelled by similar accent and/or function words—constitute a compound subject (two or more subjects).

(d) If two nouns precede the verb, stand next to one another, and are not levelled by accent and/or function words, but with only one possible determiner and that before the first noun, the second noun is the subject and the first a modifier of the subject.

(e) A single noun following the verb—a noun that has the full formal characteristics of a substantive and is not preceded by an accompanying function word or inflected for genitive case—if this noun refers to the same person or thing as the subject noun, is an identifying noun—a so-called 'predicate nominative.'

(f) Such a single noun following the verb, if it does not refer to the same person or thing as the subject noun, is the end-point of the action or object.

(g) Two such nouns following the verb—nouns that do not refer to the same person or thing as the subject noun, but do themselves each refer to the same person or thing as the other, are a 'direct' object and a 'result' object or a so-called 'object complement,' after such verbs as *call, make, elect, appoint, consider*. After other verbs they are 'direct' object and appositive.

(h) Two or more such nouns following the verb—nouns that do not refer to the same person or thing as the subject noun and do not themselves each refer to the same person or thing as the other, but are levelled by accent and/or function words—are a compound accusative ('direct') object, i.e. several objects.

(i) Two such nouns following the verb—nouns that do not refer to the same person or thing as the subject noun, and do not themselves each refer to the same person or thing as the other, and are not levelled by accent and/or function words—are a dative-object ('indirect' object) and an accusative-object ('direct' object), the first in order being the dative or indirect object.

(j) If two nouns follow the verb, stand next to one another, and are not levelled by accent and/or function words, but with only one possible determiner and that before the first noun, the first noun is a modifier of the second and the second may be either (e) or (f) above.

The second of the grammatical forms in which taxemes of selection have been lost and features of word-order now work practically alone is the CHARACTER-SUBSTANCE (the MODIFIER-NOUN) construction.

In Old English, with taxemes of selection to show the direction of modification, modifiers appear either before or after their nouns or even separated from their nouns by other words. Some examples are the following:

Comon þær scipu six to Wiht (Chron. 897)

Æþelwulfes suna twegen (Chron. 855)

on ænium operum mynstres þingum (Ben. Rule 95.14)

and ealle þara nytena frumcennedan (Exod. 133.5)

Ge gesawon ealle þa mæran drihtnes weorc (Deut. 214.7)

an lytel sæs earm (Oros. 28.12)

to ðæm Godes huse (Oros. 94.18)

þone drihtnes þægen (Ælf. Hom. 184.249)

The progressive fixing of the word-order pattern for modification can be illustrated by the facts concerning the position of the inflected genitive modifying a noun. Adjectival in its function, the inflected adnominal genitive in Old English appears, like the adjective, either before or after the noun it modifies. Out of 2247 instances of this genitive from materials of c. 900 A.D., 1175 or 52.4% stand before the modified noun, and 1072 or 47.6% stand after it.[8]

The following figures show the developing change in this situation:[9]

	c. 900	c. 1000	c. 1100	c. 1200	c. 1250
Genitive before its noun	52.4%	69.1%	77.4%	87.4%	99.1%
Genitive after its noun	47.6	30.9	22.6	12.6	0.9

Before the end of the 13th century the post-positive inflected genitive has completely disappeared. By this time the general word-order pattern to express the direction of modification has become well established: single word modifiers of the noun or adjective class preceding the nouns they modify remain in that position, whereas single word modifiers in other positions are not so kept. As a matter of fact, in the materials examined for present-day standard English, of the 1489 single word adjective modifiers there appearing, 94.9% immediately precede the nouns they modify and only 5.1% follow their nouns.[10] For single

[8] An example from Ælfric is: þæt he and eall Israhela folc sceoldon offrian Gode an lamb anes geares.

[9] See Russell Thomas, op. cit. 65-70.

[10] Typical examples of those that followed are: of the information available;

words of these classes the position immediately before a noun has become a taxeme of order signalling an adjunct relationship. In Modern English, position alone can indicate modification, and ever since the second half of the 17th century[11] nouns both singular and plural in form have with increasing frequency been made into modifiers by being placed before other nouns. The nature of such modification may be of the widest variety and is often extremely vague, but the direction of the modification is unmistakable.[12]

The position immediately following a noun, however, has also become a taxeme of order indicating a similar modifying relationship for word groups—phrases introduced by the function words called prepositions, and clauses introduced by relative pronouns. The development of the so-called periphrastic genitive, 'the analytic genitive with *of*', is typical of this construction. This word group rose in frequency after the post-positive genitive had practically disappeared. The following figures show the details of the progress.

	Post-positive genitive	'Periphrastic' genitive	Pre-positive genitive
c. 900	47.5%	0.5%	52.0%
c. 1000	30.5	1.0	68.5
c. 1100	22.2	1.2	76.6
c. 1200	11.8	6.3	81.9
c. 1250	0.6	31.4	68.9
c. 1300	0.0	84.5	15.6

In Present-day Standard English the pressure of position is such that all word groups tend to modify the word immediately preceding. In

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the best physical condition possible; *the best information obtainable from her*; *at some institution not familiar to me*; *for the time being*; *for the week following*; *two weeks ago*.

[11] I am indebted to Miss Aileen Traver for the collection of instances upon which this statement rests.

[12] Some typical examples are: *a school teacher*; *at sea level*; *the examination papers*; *beauty culture*; *a summer camp*; *a home visit*; *my household effects*; *the newspaper clipping*; *at government expense*; *the family physician*; *a funeral bill*; *the hospital gardens*; *labor conditions*. The process of these noun-adjuncts seems to me to be the same as that underlying the formation of compounds. In fact it is hardly possible to draw a line bounding the compounds and separating them from these free syntactical groups. Accent and specialization of meaning set off many clear cases, but there is a wide band of borderline cases. Frequency of a particular combination often leads to the phonetic and the semantic features characteristic of a compound.

the material examined for Present-day English, there appear 1258 of these 'prepositional phrases' as modifiers of nouns. Of these, only one (as the context proves) cannot modify the immediately preceding word:

> *The undersigned was given a physical examination for promotion by a medical board* (9054)

In these same materials, of the 396 'clause' modifiers of nouns, 86% immediately follow the noun modified, and 14% have other words (invariably a 'phrase' modifier of some sort) intervening. Examples of those with intervening words are the following:

> *I purchased a new automobile from this company for which I paid cash* (9033)
>
> *The family occupy a house consisting of six rooms and a bath which they own* (8303)
>
> *The sister has made an affidavit to that effect which I am enclosing* (8234)

One other observation may be made in conclusion. Sapir distinguished between what he called the 'essential or unavoidable' grammatical concepts and the 'dispensable or secondary' concepts.[13] If, for example, we are to say anything about a bear and a man in connection with the action of killing, it is 'essential and unavoidable' that we indicate which one did the killing and which one was killed. If the qualities 'big' and 'fierce' are expressed in connection with the man and the bear, it is essential to know to which of these two the qualities are to be attached: one must know the direction of the modification. On the other hand, whether the killing took place in the past, the present, or the future, whether it was instantaneous or long drawn out, whether the speaker knows of this fact of his own first-hand knowledge or only from hearsay, whether the bear or the man has been mentioned before—these matters are of the 'dispensable or secondary' type and may or may not be expressed. Languages differ greatly in the extent to which their grammatical practices force the speakers to give attention to these points.

In Old English practically all the grammatical relationships to which the language gives attention—both the 'essential or unavoidable' and the 'dispensable or secondary' ones—can be expressed by inflecticns

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[13] Edward Sapir, Language (1921) 99: 'We are thus once more reminded of the distinction between essential or unavoidable relational concepts and the dispensable type. The former are universally expressed, the latter are but sparsely developed in some languages, elaborated with a bewildering exuberance in others.'

(taxemes of selection), and nearly all are so expressed. The develop-
ment of English has been characterized by the loss of certain kinds of
these inflections. It might almost be fair to say that the history of the
English language in respect to its grammar has, in a large measure,
been a movement away from the type of grammatical structure in which
taxemes of selection (inflections or word forms) express both the essen-
tial and the dispensable grammatical concepts, toward a type of
structure in which taxemes of selection are used only for the dispensable
concepts and taxemes of order for the essential or unavoidable
relationships.

MISCELLANEA

THE FUTURE OF OLD IRISH *imm·aig*

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[Like the other compounds of the root *ag-*, the OIr. verb *imm·aig* should regularly form a suppletivistic future *imm·ebla* from the stem *ebl-*. Though *imm·ebla* actually occurs in a rhetorical text, its identification hitherto has been obscured by tmesis.]

Since the future of *agid*, *·aig* 'drives' is *eblaid*, *·ebla*,[1] the compounds of the same root *ag-* should have a similar suppletivistic formation in Old Irish. It is, therefore, not surprising to find *atan·ebla* 'he will change us'[2] from *ad·aig*, and *di·eblad* 'he would drive off'[3] from *di·aig*. In the case of *imm·aig* 'drives (about)', only the conditional *immus·n-eblaid* 'he would drive them'[4] is at present recorded, which, however, is corrupt for *immus·n-eblad*. But if this emendation is accepted and the pronominal infix is removed, the resultant *imm·eblad* is exactly parallel to the preceding *di·eblad*. For the simple future, one consequently expects *imm·ebla*. In the Baile Chuind Chétchathaig this form actually occurs,[5] though it has hitherto not been recognized, because the Baile Chuind Chétchathaig is written in a highly artificial rhetorical style which is purposely intended to obscure the sense, so that it has been imperfectly transmitted by the scribes, who often did not understand what they were copying. Since it is really a prophecy regarding the kings who are to rule Ireland, it follows that almost all of the verbs are of necessity in the future tense, nor is the following passage an exception to the rule: *hipthuss coderc domain Saxain imchil immus au*

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[1] H. Lewis and H. Pedersen, A Concise Comparative Celtic Grammar 335, identify *ebl-* with the root *el-*, *ela-*, whereas J. Pokorny as well as R. Thurneysen connect it with Lat. *pellere*; cf. ZfCP 13.107. For a collection of the future forms, see IF 38.195 f.

[2] Cf. Miscellany Presented to Kuno Meyer 63.

[3] Cf. K. Meyer, Über die älteste irische Dichtung 2.22 n.4.

[4] Cf. Miscellany Presented to Kuno Meyer 63. Here *immus·n-eblaid* is really future perfect, but Irish possesses no special endings for this tense.

[5] Cf. R. Thurneysen, Zu irischen Handschriften und Litteraturdenkmälern 1.52, 1.31.

Chorcc eblai.[6] Whatever may be the precise meaning of *hipthuss coderc domain Saxain imchil*, where *hipthuss*, at all events, is the future of *ibid* 'drinks' with the affixed pronoun third singular feminine, there exists little doubt that *immus au Chorcc eblai* should be emended to *immus· aue Coircc*[7] *ebla*, which may be rendered 'a descendant of Corc will drive them about.' Rearranged in ordinary prose without tmesis, the sentence would read: *immus·ebla aue Coircc*. According to a gloss in one of the two extant MSS, the 'descendant of Corc' is Fland or Fland Cinuch, as he is called in the Baile In Scáil,[8] during whose reign the foreigners who invaded Ireland were expelled.[9] Among these foreigners were the *Saxain* or the Saxons who are expressly mentioned in the passage just cited from the Baile Chuind Chétchathaig.[10] Hence, they are the object of the verb to which the infixed pronoun *s* in *immus·ebla* refers, and *imm·ebla* is the normal future of *imm·aig*, formed like the other compounds of *ag-* from the suppletivistic stem *ebl-*.

Caxambas, A FLORIDA GEOGRAPHIC NAME

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Caxambas Pass is the name of a stream that divides Marco Island from Cape Romano, off the southwestern coast of Florida. A modern hamlet on the island is also called *Caxambas.* The stream was formerly designated as a bay, and the variant *Caximbas* was likewise applied to a river on the mainland in this vicinity. The appellations of the pass fall into two groups, the first having *i* in the middle syllable, the second *a*:

GROUP I. *Caximbo Espaniola*, Bernard Romans (1772) in P. Lee Phillips, Notes on the Life and Works of Bernard Romans (Deland, Florida, 1924) 125; *Caximbo Espanola*, Romans's map (1774) in Phillips 22; *Caximba*, Arrowsmith map (1814); *Caximbas B.* and *Caximbas R*, Tanner map (1823); *the Caximba*, J. L. Williams, The Territory of Florida (New York, 1837) 33; *Caximbas Bay*, Davis War Map (1856); *Caximbas Bay*, Rand-McNally map (1882).

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[6] The other MS reads: *hiphus codeirc domhain Saxain amicil immais hua Corc hebl-*.

[7] Or *Cuircc*.

[8] Ed. K. Meyer, ZfCP 12.238, §65.

[9] Cf. *tola n-echtrand 'na re ... Aurscartad n-echtrand*.

[10] In the Bethu Phátraic ed. K. Mulchrone 1.73, which was compiled about 900 A.D., Patrick requests the angel of the Lord not to allow the Saxons to inhabit Ireland. The source of the Bethu Phátraic has, however, *barbarae gentes* for *Saxain*; cf. op.cit. 1.72.

GROUP II. *Caxambas Pass*, Rand-McNally map (1886); *Caxambas Pass*, Century Atlas of the World (1899); *Caxambas Pass* and *Caxambas* [hamlet], Sectional Map of Florida (1930).

Such names as *Boca Grand* and *Boca Seco* on Romans's map of 1774 seem to betray carelessness on the cartographer's part in the spelling of Spanish names; hence his *Caximbo Espanola* or *Espaniola* is doubtless intended for *Caximbo Español*.

The forms in the first group point to a plausible source in the widely used American-Spanish *cachimbo,-a* 'a smoking-pipe'. In Cuba *cachimba* is also the name of certain plants belonging to the species *Aralia* and *Hedera*; in Puerto Rico and Venezuela *cachimbo* is applied to various kinds of trees or shrubs—for instance, the milk-bush (*Rauwolfia nitida* Jacq.) and a species of wild coffee (*Psychotria*);[1] in Costa Rica *cachimbo* is the name of an 'arbusto de madera huesosa que los indígenas empleaban como tubos para aspirar el humo del tabaco.'[2]

The prickly ash, *Aralia spinosa* L., grows in the woods and low grounds of Florida; and at least three species of wild coffee, *Psychotria sulzneri* Small, *P. nervosa* Sw., and *P. bahamensis* Millsp., flourish in the hammocks of southern Florida, the Keys, and adjacent islands. It is therefore possible that the name *Caximbo* or *Caximba(s)* was originally given to the pass because of certain characteristic features of the flora in the pass and its vicinity. John Lee Williams, writing in 1837, merely observes that the north end of the pass 'is much cut up with creeks and lagoons, but contains some extensive hammocks and old fields.'[3]

American-Spanish *cachimba*, with its variant *cachimbo*, is undoubtedly of African origin. Leo Wiener associates the cognate Portuguese *cachimbo* 'a smoking-pipe' with Congo *kashiba* (*ka twanga*) 'pipe' and Zanzibar *kasumba* 'opium', tracing the latter to Arabic *qaṣabah*, *qussābah*, or *qassībah* 'pipe'.[4] Jacques Raimundo, however, suggests that the source of Portuguese *cachimbo* may be African *ka-tchimbu* or *ka-njimbu*, a compound of the diminutive *ka-* and *njimbu* 'a shell resembling a pipe', or perhaps African (Mozambique) *ka-chi-imbo* 'a cattle-bell, a baby's toy'.[5] A source even more relevant than those

[1] See A. Malaret, Vocabulario de Puerto Rico (n.d.) 114; Diccionario de Americanismos² (San Juan, 1931) 89, 90, 91: *palo cachumba* (Cuba and Puerto Rico) as a variant of *palo cachimba* (*Rauwolfia*).

[2] C. Gagini, Dicc. de Costarriqueñismos (San José de Costa Rica, 1919) 79.

[3] The Territory of Florida 33.

[4] Africa and the Discovery of America (Philadelphia, 1920) 1.112–3.

[5] O Elemento Afro-negro na Lingua Portuguesa (Rio, 1933) 110–1.

just cited is found in Nyanja, a Bantu language of Nyasaland, in which the name for an ordinary smoking-pipe is *kachimbo*.[6]   In some languages of the French Congo, also, a pipe is called *njambo*.[7]

Though Portuguese *cachimbo* may have been the link between African sources and American-Spanish in some areas, African slaves must have brought the word directly to Spaniards in certain regions of the New World.

The orthography for the name of the pass generally had *i* in the middle syllable until about 1880.   The Rand-McNally map of 1882 records, for example, a *Caximbas Bay*, whereas the similar map of 1886 shows *Caxambas Pass*, the name by which the sound is at present known. What caused the shift from *Caximbas* to *Caxambas* it would be difficult to say: whether *i* became *a* through a printer's, a surveyor's, or a cartographer's error; or whether the spelling followed a change in the pronunciation and meaning of the name because of a misapprehension of the original form—these are conjectures to which I have found no answer.

Unless *Caxambas*, however, is a synonymous variant of *Caximbas*, the analysis of the two forms cannot be identical.   *Caxambas* is apparently connected with Chilean Spanish *cachámba*, f., which Lenz defines as the name of a small fish found at the mouth of the River Maipo.[8] For *cachámba* Lenz suggests a Kechuan source.   Furthermore, Malaret records the form *cachampa*, m., as the Chilean Spanish name of the common or striped mullet (*Mugil cephalus* L.).[9] That *Caxambas* should signify 'mullets' is highly plausible in view of the vast numbers of mullet that are caught in Florida waters.[10]   Some distance north of Caxambas Pass, at the mouth of Tampa Bay, there is actually a key called *Mullet* (Tanner, 1823; Sectional Map, 1930).

Portuguese influence in the shift of *Caximbas* to *Caxambas* seems extremely improbable in view of the prevalence of Spanish names along the coast of Florida and among the Florida Keys.   Nevertheless, it is true that Portuguese *Cachimbau* (*Caximbau*), *Cachimbo* (*Caximbo*), *Caximbos*, and *Caximbu* occur as geographic names in South America.[11]

[6] See D. C. Scott, Cyclopaedic Dictionary of the Manganja Languages (Edinburgh, 1892) 198.

[7] P. J. Calloc'h, Vocabulaire Français-Gmbwaga ... (Paris, 1911) 160.

[8] Dicc. Etimolójico de las Voces Chilenas ... (Santiago de Chile, 1910) 1.157.

[9] Dicc. de Americanismos² 88.

[10] Cf. D. S. Jordan and B. W. Evermann, The Nature Library (New York, 1905) 5.253.

[11] Raimundo, O Elemento Afro-negro 110, 111, 120.

Caxambu is apparently adapted from *ki-otchiambu* 'big cage', a Bantu word belonging to the Umbundu or Nano language in the region of Benguela.[12] Portuguese *caxambu* has come to mean a drum as well as a dance executed to the sound of the drum.

I add a few words on the pronunciation of *Caxambas* and *Caximbo*. The former has manifestly been Anglicized, and the current [kæk-ˈsæmbəs] betrays the influence of the spelling. But in what manner *Caximbo* was pronounced may never be ascertained. If Romans was familiar with Spanish fishermen, he may have heard Andalusians sound the *x* as [ʃ], or other Spaniards sound it as [s] or [ks].[13] I am familiar with the substitution of Andalusian *x* for French *ch* in 18th-century land records of Louisiana: thus Pintado, in his surveys (1792–1810) of the Atakapa region, records *Rio Thex o de Atakapas* for *Bayou Tèche* [tɛʃ]. It is, however, highly probable that most Floridians of Romans's time ignored Spanish influence and pronounced *Caximbo* as [kækˈsɪmbo] in strictly English fashion.

Durendal ONCE MORE

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Albert Dauzat, Le français moderne 7.375, reviews my article on the name of Roland's sword (LANG. 15.48–50) as follows:

L. Spitzer rejette, à bon droit me semble-t-il, l'explication de *Durendal* par G. Rohlfs ... , qu'il qualifie de livresque (*dur*, adj. + *end* = *en*, + *art*, var. de *-al*, = brûle). Il propose une onomatopée populaire (variante de *drelindal). Je crois, pour ma part, que ce problème est lié à celui de *Durand*, et que ce nom d'épée, comme *Floberge* rappelé ici par M. S., pourrait être aussi dérivé d'un nom de personne.

Quant à l'étymologie possible de *Durand* (it. *Durante*) par "dur", je signale dans *Minerva* (Turin; 15 oct. 1938, p. 607), une notice de P.-S. Pasquali (avec une copieuse bibliographie) sur le nom de *Dante*, considéré comme une forme familière, syncopée, de *Durante*, avec une référence intéressante de G. Papini sur ce dernier nom: "Lo chiamarono, nel battesimo, *Durante*, ch'esprime idea di costanza" (*Storia della letteratura italiana*, 1937, I, 128).

I am forced to accept this criticism, since my explanation rested on too vulgar an onomatopeic word-stem (**drelin-* 'to dangle') for such a noble instrument (*bele e seintisme*, Chanson de Roland v. 2344). The

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[12] Cf. Raimundo 120; A. Meillet and M. Cohen, Les Langues du Monde (Paris, 1924) 585.

[13] Cf. N. Tomás, Manual de Pronunciación⁴ (Madrid, 1932) 140. He sanctions [ks] for *x* in 'dicción culta y enfática'.

stem of *durare*, on the other hand, is quite appropriate for a sword which *cruist, ne fruisset ne se brise* (v. 2340). The *-d-* instead of *-t-* is to be explained as in *marchand -e, chaland -e*; cf. Meyer-Lübke, Hist. Gr. d. frz. Spr. 1.186.

A FURTHER NOTE ON THE DIALECT OF LUNENBURG, NOVA SCOTIA

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In LANG. 11.140–7 some notes were presented on the English dialect of Lunenburg, Nova Scotia.   On pp. 146–7 there was given a handful of words still in more or less general use which are survivals of the original German speech of the inhabitants of this town.   Recently another interesting word which still preserves great vitality has returned to my memory.

On Christmas Eve and New Year's Eve parties of young people go about the town dressed in costume, frequently that of the black-face comedian, occasionally that of an old-fashioned couple with stove-pipe hat, whiskers and cutaway coat for the man and bonnet or cap, shawl and very full, long skirt for the woman.   On Christmas Eve the party may include one person dressed in the Santa Claus costume of red with cotton-wool whiskers.   Some of the party have musical instruments— violin, guitar, or whatever the instrumentalists know how to play. The party makes a round of the shops in the town's main street, playing, singing, and dancing (tap or the older breakdown), and demanding largesse.   Usually the houses of some of the more prominent citizens of the town are also visited.   The members of these parties are called individually [ˈbɛlsˌnɪkl̩] and collectively this with the plural [z].   The word *Pelznickel*, i.e. 'pelt–(St.) Nicholas,' has been recorded on the Rhine, and a variant *Belsnickel* in the Hunsrück and in the Rhenish Palatinate to the south of it.[1]   That this variant is the one preserved

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[1] O. A. Erich and R. Beitel, Wörterbuch der deutschen Volkskunde (Leipzig, 1936), s.v. *Nikolaus*, and the references there given, especially K. Meisen, Nikolauskult und Nikolausbrauch im Abendlande (Düsseldorf, 1931) 36, 470. The linguistic form is found in E. Hoffmann-Krayer and H. Bächtold-Stäubli, Handwörterbuch des deutschen Aberglaubens, vol. 6, col. 1092, s.v. *Nikolaus*. It is quoted there from Albert Becker, Pfälzer Volkskunde 286, and W. Diener, Hunsrücker Volkskunde 220, neither of which is available to me.   For bibliographical aid I must record my thanks to Professor Hans Kurath.   He tells me that the word and the custom are current among the Palatine settlers in the Pennsylvania German area.   For a description of the custom see H. Harbaugh's poem 'Der Belsnickel', Harbaugh's Harfe (Gedichte in Pennsylvanisch-Deutscher Mundart, ed. by B. Bausman; Philadelphia, 1870) 23–4.

at Lunenburg, though the users have no knowledge at all of the analysis of the word, is a slight confirmation of the tradition that the Germans of Lunenburg were 'Palatines'.[2] It must be noted that the Belsnickels of Lunenburg are not 'Gabenbringer' nor St. Nicholas himself as are those of the present-day Protestant German areas, but are rather to be considered as companions of Santa Claus (['sænti ˌklɔ·z] or ['sænti]), as an older tradition in Germany had it.

[2] LANG. 11.140.

REVIEWS

FOUNDATIONS OF LANGUAGE. By LOUIS H. GRAY. Pp. xvi + 530. New York: Macmillan, 1939.

This book sets out to review the subject-matter and results of linguistics, as well for the general public as for the technical linguist. The author deals with the nature of language, with phonetics, morphology, and etymology, and with the classification of languages. Among the finest features of the book are the chapter on the historical method of etymology, and the two useful and detailed chapters classifying genealogically the languages of the world. However, in spite of Professor Gray's unquestioned competence as a linguistic worker, the value of the book is vitiated, especially for the layman, by a major shortcoming. This is the neglect of the method of structural analysis, i.e. of organized synchronic description. As a result, many of the facts about languages are misconstrued, and linguistic theory is distorted. It is the chief purpose of this review to show that an appreciation of linguistic structure is necessary for any interpretation of linguistics, and that its neglect leads to undesirable results in practice.

From the very start, neglect of synchronic structure cuts a linguist off from most of his data. Gray says: 'linguistic method must be essentially historical in its assemblage of material' (1). As a result, he cannot deal linguistically with material which cannot be historically traced: 'In ... the American Indian languages ... the data are too meagre to afford a basis for more than the most tentative of interpretations' (2); this in spite of the fact that data for structure and comparison are as available here as elsewhere. In listing the linguist's sources (141), he speaks only of literature and written materials of earlier times, and fails to mention ordinary conversations (which he mentions on p. 226), a slip made possible only by a denial of the value of synchronic description. This stressing of written sources is the more regrettable, as the data for speech not only are more direct, numerous, and normal, but also have greater laboratory value, since in speech we have opportunities for controlled observation, and even for experimental conditions (as in the creating of test forms to check the productivity or classification of a process).

In the interpretation of his data, neglect of the structural method cuts the linguist off from the organization of all non-historical facts. The author sees only the historical interpretation: 'It becomes necessary to be thoroughly versed in the history of each language before one can render a scientific judgement upon any of the phenomena which it presents' (2); the 'method of procedure [of linguistics] is essentially the same as in investigation of any problem of history' (4). To get the real meaning of words, therefore, we must know not only how they are used, but also their history: 'If the student of literature . . . is ignorant of the historical development of words and their arrangements, . . . he sunders himself from that which will give him a keener appreciation of literature' (142). And of the syntax of a language at various periods: 'The later period is seldom fully intelligible without knowledge of the earlier' (226). Such appeals to history are beside the point, since the meaning of forms and of their arrangements is necessarily given by a complete description of how they are used, i.e. of what they mean to the people who use them.

The practical results of this position appear throughout the book. Some interpretations are historical: the proof that in nominal sentences we do not have an omission of a copula is that 'originally there was no such thing as a copula' (230). Others are comparative: 'Phonology, morphology, and etymology may be studied with fair adequacy with the help of tables of sound correspondences' (226; there is no hint that these may be studied by themselves as systems in a single language). Still others are semantic: 'The sentence consists essentially of two parts. . . . Sentences containing only a noun, such as *fire, murder*, are really elliptical and require a verb to make their meaning complete, *there is, is being committed*' (228–30). Such explanations are necessarily irrelevant, and may lead to incorrect analysis, as in the last example cited. The structural relations are clouded. Elements are accounted similar or different according to their original state: 'Grammatically, nouns and adjectives are identical; their functional differentiation . . . was a later development' (169); 'In Indo-European . . . the pronoun for the third person is, in reality, a demonstrative' (173); 'Outward identity of form does not necessarily imply essential and historical unity' (2), so that homonyms of different origin are considered descriptively separate, even if they would now be the 'same word' in the speaker's judgment. 'The Latin ablative has three general connotations: "from", "with", and "in"; they are irreconcilable so far as Latin alone is concerned. If, however, we compare Latin declension with Sanskrit, we find that the

Latin ablative is a combination' (19–20).   But for Latin this is a single morphological relation, not three irreconcilable ones.   The division into three is merely what a Sanskrit or English speaker would find in Latin (though an English speaker might well find some other division, since the one above is not based on any category of his language); it reflects nothing in the Latin language.   Insofar as any parts of utterances in a given language have the same form, and are used in the same way in respect to the other parts, they are necessarily identical in any sense which we can investigate.

Failure to organize data by their place in the structure often leads to unsatisfactory classifications.   Thus we find the verbal prefixes of Semitic (*hi-*, *ta-*, etc.) mentioned together with root determinatives (Arabic *na-* in *našara*, also IE *-ent-*, *-tor-*, etc.; 156–8); but the former can be used with almost any verb, are members of a closed contrastive set (category), and exist not by themselves but only in conjunction with certain vowel patterns, while the latter are ordinary and non-contrastive suffixes, each limited to a few particular roots.   Translated words are called foreign (132) even if they have been formed in accordance with the structural processes of the language; no indication is given that a word like Ger. *übersetzen*, though it would be regarded as a translation in a study of inter-language contacts, is structurally indistinguishable from other German words.   Lack of structural analysis thus enables the author to call some scientific terms 'linguistically correct, both elements being drawn from the same language', while others are 'linguistically unjustifiable, whose components are taken from different languages' (148).   One need hardly point out that for the speaker it makes no difference if the elements come from one language or two, but only if the phonological and morphological structure of the form is the same as that of other words in his language.   The difficulties of classification come out clearer when, after describing genders, Gray mentions the Bantu classes, saying: 'It is not quite certain whether these classes can properly be termed genders' (190), though the Bantu classes differ in important respects from IE genders, and can only be described in terms of their structural position in Bantu.   Similarly, Gray looks upon case as being not a grouping of morphological relations in a language, but something existing of itself: 'We may reckon the number [of case-forms] as at least thirty-six, of which IE has eight' (191).   But the only number of case distinctions which can be listed is the largest one observable in any particular language (much below 36).   To list a series of case significations is arbitrary and useless, for every language

covers all the noun relations that exist in its utterances. The inessive
of Finnish is partly or wholly equalled in the locative of Latin or the
genitive of Arabic, so that these three cannot be added to each other
in this list; on the other hand, the accusative or genitive of Latin and
of Arabic cover different functions, and cannot be equated and counted
as one in the list. The author ascribes 'one [case] each to Modern
French, Italian, Spanish' (191). But one case is no case; if the formal
relation of nouns to other words is the same for all nouns in that language,
then it is pointless to set up a class of nouns having that relation (case).

In view of all this, it is not surprising that no adequate statement
of phonemic analysis appears in this book. The nearest we come to
it is this: the speaker 'normally hears (i.e. specifically recognizes) only
those individual words or sounds which he feels necessary for under-
standing the force of the sentence collectively' (225). Disputed inter-
pretations of the phoneme are mentioned (61), but there is no indication
that, whatever the interpretation, all linguists use it in much the same
way. Phonemes are used because every language can be most con-
veniently described in terms of a number of such units; but this is a
result of structural analysis, and does not emerge here. The further
result, that certain linguistic events can be described as determined
by phonemic structure, is also omitted. Thus, in describing the
difficulty of pronouncing foreign sounds (5), there is no mention of the
interference of the speaker's native phonemic habits. In speaking
of the 'effect midway between voiced and voiceless' which voiceless
lenes make on 'the unaccustomed ear' (51), what is meant is an ear
accustomed to voiced lenes and voiceless fortes. The author arranges
sounds according to length, sonority, etc., and gives such rules as that
short vowels become shorter yet before voiceless consonants (57–60),
without indicating that in the phonemic structure of any given language
only certain of these phonetic differentiae and habits (rules) are sig-
nificant, while others don't exist or are non-distinctive. There is also
no discussion of phonemic distribution, i.e. of the various positions in
which each phoneme may occur, the absence of phonemic contrasts
in certain positions (neutralization), etc. Morphophonemes are omit-
ted, presumably so as not to complicate the account, although they or
their equivalent are necessary in any discussion of linguistic regularity.
These omissions were possible only because the author did not con-
sider the existence of a phonologic structure in each language.

Neglect of structural analysis of each language leads to disregard
of the differences between language structures. This is true even of

the different structures of successive periods of the same language, as
when Gray says 'Hebrew usually has the Arabic word-order' (239),
which was true at one period of Hebrew, but not at another.   Gray
is quite aware of the principle that each language should be 'judged
on its own merits' (166), but fails to apply it structurally.   Hence,
he offers a 'formula for a word in any inflected language' (159), whereas
the structure of words in various languages is quite different; it is
meaningless to combine the structural analyses of words in languages
of different structure, as may be seen from H. J. Uldall's letter which
Gray courteously prints on pp. 146-7.   The verb is defined as 'a word
characterised by inflexion, if inflected at all, for person' (178); but this
does not define the verb e.g. in Southern Paiute or Zuni, nor will it
serve for Hidatsa, where any stem may take on any personal element,
and may then take on any of a class of final (syntactic) elements,
some of which would make the form verbal (for us) while others would
not.   Further on we read that 'the accusative has a terminative or
illative signification . . . as in Latin' (193); but in Arabic most of these
significations would appear in the genitive.

How much distortion may result, is seen from the statement 'prep-
ositions serve as substitutes for inflexion in analytic languages' (157).
Descriptively, we would not make such a statement, for as far as
these languages are concerned, the prepositions have their own place
in the economy, and substitute for nothing.   But, what is more im-
portant, this statement conceals a possible great difference in the
economy of languages between the inflexions and the prepositions
(which often, indeed, have replaced inflexions historically).   For if
the inflexions are grouped into a closed contrastive set (category:
e.g. cases, aspects), then every form of the class concerned (here nouns,
verbs), as it occurs in speech, necessarily belongs to one of the inflexions
as against the others; and forms without inflexional element (if there
are such: e.g. vocative in some languages, jussive in Semitic) contrast
formally with the other inflexions of that category as having a zero
inflexional element.   On the other hand, in languages where the
analogous utterance has merely a preposition or the like, the contrast
within a closed group of possibilities does not exist; the preposition
contrasts now with all the other words of the same form-class which
could stand in that position, and the utterance has no formal descrip-
tion in that language beyond the syntactic pattern which is realized
in that particular combination of words.

Since one cannot do entirely without structural interpretations, the

linguist who does not explicitly work out the structure of other languages is in danger of interpreting them in terms of his own. Most of the slips listed above have been in the direction of regarding English or IE categories as general distinctions which must exist, if with different details, in all languages. The grammatical statements are mostly based on IE; e.g. in the discussion of persons (203) there is no mention of the Algonquian obviative (fourth person). Gray is justified, in that he announces that he will stress IE (vii), but readers will assume that these descriptions cover all or most languages. This home influence becomes more apparent in the examples which follow. In listing non-IE distinctions, the author writes: 'Many languages carefully distinguish in the pronoun between inclusive and exclusive forms' (182). But, of course, they distinguish this no more carefully than anything else; it is merely that English speakers are not accustomed to making such a distinction. A Hidatsa speaker might say that English carefully distinguishes between singular and plural. Again: 'So meagre is the language (Aranta) that it is frequently impossible to determine the meaning of its words without knowledge of the circumstances under which they are spoken' (155). But the meaning of linguistic forms in any language is known primarily from the circumstances in which they are spoken, and one can use the short-cut of translating them into a second language only to the extent that the second language has roughly similar distinctions between the meanings of its own linguistic forms. The same slip appears when the author says, concerning the usefulness in Asia and elsewhere of an international language based upon Latin: 'Knowledge of the phonology and morphology would be fairly easy to gain; but the vocabulary would remain hopelessly alien' (36). He can say this only because Latin phonology and morphology are sufficiently similar to those of the languages he knows. To a Chinese or Navaho, they would be as alien as the vocabulary, and far harder to acquire. (His suggestion of reviving Latin for this purpose likewise misses the point that the desideratum in an international language is a simple structure.)

The structural method is basically the placing together of any formal features of a language which in respect to any criterion are similar. Sounds in each language may be grouped according to certain phonetic features and certain complimentary distributions in respect to the other sounds in the flow of speech; we find this classification into phonemes particularly convenient because in terms of it we can briefly identify the sounds of any utterance in that language. The phonemes

may be grouped according to the positions they can occupy in respect
to other phonemes, and insofar as this yields distinct classes, such as
consonants and vowels, we may describe in terms of them the shapes
of linguistic forms in that language, and the relations between certain
partially similar forms.   In the same way, we arrange various features
of the occurrence of morphemes: the positions each one occupies in
respect to other morphemes, the types of combinations into which
it can enter, the particular morphemes with which it actually combines.
Such arrangements give us various classifications which supplement
each other.   If we find two or more morphemes which enter into
complementary (contrastive) combinations, but whose meanings are
the same, and the sum of whose positions in these combinations is
the same as those of single morphemes, we group them as suppletive
variants (e.g. *is*, *am*, *are*).   Where we find many morphemes whose
positions and range of combinations is the same, we group them into
a major form-class; and where we find that some of these will combine
only with particular members of the other classes, we group them into
sub-classes.

We call this 'structure', because all these statements and classifica-
tions for any given language can be organized in terms of particular
units (phonemes, morphemes, etc.) and relations existing among them.
We call it 'pattern', because many of the relations crisscross each
other, often in parallel lines.   Some linguistic facts will escape the
investigator who does not try to arrange the initial classifications into
possible networks, who does not look for relations between the relations.
If the relations between certain sub-classes may be arranged into a
category, their place in the structure will be quite different from that
of relations which cannot be so arranged.   Thus the difference between
a category of tenses, and a number of semantically similar morphemes
(words or affixes) referring to time, is that the absence in an utterance of
any such morpheme means that it is indifferent as to time, whereas
the absence (if that is possible) of any tense-morpheme from an ut-
terance in which the tense-category is used indicates a particular kind
of time-reference (expressed by zero-affix) contrasted to the time-
reference of all the other tense-morphemes.   That this patterning
of linguistic facts is not a forced laboratory arrangement, follows from
the fact that it determines an important type of linguistic event:
analogic change.   Analogic new formations, whether or not they be-
come accepted (or yield forms already existing in the language), can
be simply described on the basis of the existing pattern.   Therefore,
whereas phonetic change may yield new classifications in the language,

analogic change never can, but only adds a new member to an existing class, frequently transferring a form from a rare (small) class to a common (large) one in the same category.

It is important to recognize that language is a system of units and their relations, because that often serves as our criterion of what material is language and what is not. Only on this basis do we exclude at present the vast and as yet unorganized fields of expressive modifications (e.g. anger-modulations, intonations of sarcasm, etc.), and of the linguistic differentiae used by particular sections of the community (e.g. characteristic intonations of girls, etc.). All these have conventional phonetic forms and meanings, no less than language proper, and are marked off from language only because we cannot analyze them structurally in the same way. It is therefore unfortunate that Gray uses 'language' (for French langage) to include the babblings of infants (15), which do not involve any linguistic system, or that he should put in one category American Indian 'winter counts', which were not based on the system of language, and our own writing, which shows a one-to-one correspondence with our language structure (18–9). The same considerations suffice to disallow his separation of morphology from syntax, as belonging to two different orders of linguistics, the 'mechanical' and the 'psychological' (145); for the type of predications is the same in both: relations of order, combination, and the like among linguistic forms, the difference between the two lying usually in the individuals (linguistic forms) of which they treat.

Some of the difficulties encountered in this book suffice to show why the structure of a language can be described only in terms of the formal, not the semantic, differences of its units and their relations. Though Gray says that classification must be by form (which, however, he defines as 'morphology viewed in the light of historical development', 165), the criteria which are actually used in the book are semantic almost throughout. Thus, 'the ultimate identity of the noun and the adjective are clearly shown in such abstracts as *the beautiful,* which are practically synonymous with *beauty*' (169); but the semantic identity does not alter the structural fact that their phonetic forms and their relations to other words (e.g. to *the*) are different. Again: 'A verb is the sole part of speech which can form a complete sentence' (230); but whether in any given language a verb can or can not do this is a question of the formal structure of that language, and can not be stated absolutely on the basis of the semantic value of verbs. Again: 'The ultimate distinction between a compound and a non-compound is purely semantic: has, or has not, the word-combination acquired a

special and distinct connotation' (160). In each language, however, we would find regular formal differences, as in *res'publica* : *'res'publica* and all the other examples Gray gives; were it not so, how could we distinguish between compounds and 'idioms' (since Gray uses that term, 9), which also have special connotation, but are formally phrases of separate words? The statement 'The singular denotes either a single thing, or a group of things regarded collectively; the plural more than one thing regarded as individuals' (179) is wrong even for English (e.g. *the masses* is a 'collective' in Gray's sense above, but is plural in form); it is irrelevant for languages of different structure, e.g. those which have no plural but only a distributive; and it is useless in any case, being circular. For how do we know if a number of things is regarded collectively or individually?—for the most part, by whether the word is in the singular or in the plural.

The treatment of aspects here is a good example of the irrelevance of semantic classification. The IE ingressive, terminative, etc., are given together with the Semitic reciprocal (207), without any indication that these meanings are expressed in IE by determinatives (*n*, *sk*, etc.) which are added to a few particular bases, but in Semitic by a prefix + vowel-pattern which may be used with almost any root and which is a member of a closed category of contrastive aspects without which no Semitic verb exists. And on p. 204 we find: 'The meaning of many verbs in itself denotes their aspects; e.g., English *strike* is instantaneous while *beat* is durative', a distinction which has no formal basis and which is entirely inconsequential to linguistic structure, for if we desire we can make an endless number of similar non-formal distinctions in any material. True, after the formal mechanism of a language has been worked out, it may be interesting to ask how it compares with other languages in meeting the same situations, i.e. in the rough classification of meanings, but that cannot be done before the structure is described.

Explanations of the causes of linguistic events are unwise at the present stage of our knowledge. The logical analysis of ideas, which is used by several European linguists today, is irrelevant to linguistic structure. When Gray says 'From the point of view of strict logic, there should be no neuter nominative. An inactive thing cannot, theoretically, have the active function implied by possession of an active (i.e., nominative) case' (192–3), he merely shows that these logical categories have nothing to do with it, because, in various languages, nouns in the neuter class do have the affix and sentence position called nominative. Nor is anything gained through teleological

explanations, such as that a particular lengthening occurs 'to compensate for the loss of a phoneme' (66); the same facts are stated if we say that the loss is a condition for the lengthening.

Particularly undesirable are psychological explanations. They add nothing, as when we read concerning the use of the second person familiar pronoun: 'words tabued as too exalted or too debased for ordinary use may be employed as terms of familiarity.... In all these cases the true second person is employed only in addressing the Deity or, at the other extreme, children, servants', etc. (265). It is pointless to explain a single linguistic relation by two different psychological relations, as is necessary here. Even if we could find a single psychological relation in terms of which these two situations would be similar, it would give us, indeed, a single range of meaning for 'tutoyer', but would not 'explain' it. These explanations are ad hoc: 'The cow has practically only one designation throughout IE, since her one special function is to give milk. The horse, on the other hand, is used for many purposes' and therefore various names have developed in various languages (268). When it comes to etymologies, Gray recognizes the exegetical character of such methods (279). They cannot be tested, and arise from no evidence beyond the linguistic fact itself: e.g. 'Progressive assimilation is mechanical.... In regressive assimilation and metathesis the process is psychological' (73), whereas all we can say about both is that they are the result of bad timing in a set of habitual motions.

Psychological explanations are often circular: 'The earliest stages of IE had no future, but as need arose to express future time and, consequently, to denote such a tense, a number of devices were adopted' (20); the tense is there because they had need of it, and the proof that they had need of it is that the tense is there. Even on their own level they may not be sufficient causes: words suffer pejoration because of the 'natural desire to veil unpleasant facts by pleasant words' (266); but why does this occur only for certain such facts and words, and not for others? In some cases they break down, as when Gray writes: 'names for parts of the body ... show curious transfers of meaning' (270); facts are 'curious' only if the explanation offered for their class fails to cover them, and it is the explanation that is at fault, not the fact that is curious. Investigators who use such explanations often miss possibilities of further formal analysis. On p. 239 the author writes: 'practically only the psychological element remains to explain the arrangement of the words of the sentence'; but if he had not been

satisfied with such a statement, he would, on closer analysis, have found the class and sub-class selections that make up most of syntax.

It is therefore pointless to offer psychological explanations for linguistic phenomena. Gray says, indeed: 'I commit myself neither to a vitalistic nor to a mechanistic theory of language' (viii); nevertheless, a mentalistic theory is used throughout the book. 'Behind the vocal and auditory apparatus lie mental and psychological processes. . . . In its non-physiological aspect it [language] is the result of unnumbered centuries of effort to express facts and ideas' (7). How we know of the mental processes or of the centuries of effort, is not indicated. Language is referred back to mentalistic causes: 'It is a physical and external manifestation of a non-physical (emotional, intellectual, spiritual) and internal state, an endeavour to represent materially what is essentially immaterial' (15); on p. 7 he recognizes that this is 'a paradox', but fails to see that such a paradoxical result destroys the theory. Mentalistic definitions like 'The sentence is the oral expression of a mental concept' (225) are, of course, of no use in identifying the sentence. In general: 'Thought is indispensable in language' (88); 'the more complicated the thought, the greater the need of exact expression in speech' (96). On the other hand, 'the influence of speech on thought is very great; . . . any novel idea remains more or less vague in the thinker's mind until it has been expressed' (95); 'Soliloquy is very frequently an endeavour to clarify the individual's thoughts by translating them into audible speech' (17). It is hard to see how the author pictures this, in view of his statement that 'underlying psychologies . . . often hamper them [languages]; while they in turn . . . hamper the psychologies' (7).

These few quotations suffice to show how difficult it is to offer coherent mentalistic statements about language. Such statements lead to unjustified attitudes, as when the author argues on this basis that 'no language is a perfect instrument which can render each and every concept of the speaker' (7); there is no support for this opinion, since we know nothing about any 'concepts' or observations which members of a group could express but which can not be expressed in the language that the group has developed up to that point. There is a necessary circularity in all these statements, since our only evidence for thought is language. 'Whether a given language shall live or die seems to depend not so much upon economic laws and the like as upon that imponderable sentiment or emotion which constitutes, on the one hand, will that it shall live or, on the other, indifference to its fate'

(33). If it dies, that is because there was no will that it should live, but the presence or absence of that will is discovered only by whether it lives or dies. These statements cannot be tested, and their adoption blocks the road for further investigation: in this case, seeking the laws which determine the death or survival of languages, laws that would probably be identical with laws of social and cultural change, since the use of language is itself a cultural event. Attitudes about the psychologies underlying languages are doubly undesirable, since they imply that different language communities have different psychologies (and presumably worse than ours, since we cannot say in their languages all that we can say in ours), a conclusion for which there is no evidence, and which has dangerous social implications.

Any psychological or sociological interpretation of language is permissible (and by the same token every one is irrelevant) so long as it does not conflict with the results of linguistic investigation; which of them is desirable can only be decided in terms of the other sciences. It is more efficient, therefore, to formulate the units and relations and events of language directly in linguistic terms. The statements of a science should be given in a form available to all those who are interested in it; they must refer to such features as the scientist, with his apparatus and method, can distinguish or measure.

Thus, however we may individually look upon 'meaning', the meaning of linguistic forms must be made identifiable by some linguistic definition. It avails nothing to say that it is a mental concept, or that it 'becomes clear only when the word's history is studied' (251). The meaning of a linguistic form may best be defined as the range of situations in which that form occurs, or more exactly, it is the features common to all the situations in which the form occurs and excluded from all those in which it does not. This furnishes a test which, though impossible in practice, is at least conceivable. In practice, we use approximations to this: the meaning of a form class is the contrast between its positions and combinations and those of the other form classes; the meaning of individual morphemes is approximated by contrasting the situations in which they occur in an utterance with the situations in which the same utterances occur without them, and so on. With such a definition, a statement like the following would be an obvious corollary: 'when a word is borrowed by another language, it may come to diverge widely in meaning from its earlier sense' (273). It is a corollary because borrowing is the use of a foreign word in a native utterance, in a situation in which that word would be

used in the foreign language. The only uses of the word which are directly equivalent in both languages are those occurring in the situations in which the borrowing takes place (in which the native speaker is constructing an analogy to the foreign utterance). All further occurrences of the word in native utterances are determined by native conditions; the range of situations (i.e. the full meaning) of the word in the foreign language is not borrowed.

With an apparatus of linguistic definitions, the work of linguistics is reducible, in the last analysis, to establishing correlations. Correlations between the occurrence of linguistic forms and the occurrence of situations (features of situations) suffice to identify meanings; the term 'to signify' can be defined as the name of this relation. There is therefore no need to regard 'sign' or 'symbol' as primitive terms of linguistics. To say that linguistics is a 'science sémiologique' is to push its foundations back to a 'science' which cannot be studied objectively, to a relation of 'signifying' (16–7) which requires something like teleology for its understanding. And correlations between the occurrence of one form and that of other forms yield the whole of linguistic structure. The fact that these correlations may be grouped into certain patterned regularities is of great interest for psychology; but to the pattern itself need not be attributed a metaphysical reality in linguistics. Gray speaks of three aspects of language (15–8), basing himself on the langue–parole dichotomy of de Saussure and many Continental linguists. This division, however, is misleading, in setting up two parallel levels of linguistics. 'Parole' is merely the physical events which we count as language, while 'langue' is the scientist's analysis and arrangements of them. The relation between the two is the same as between the world of physical events and the science of physics. The danger of using such undefined and intuitive criteria as pattern, symbol, and logical a prioris, is that linguistics is precisely the one empirical field which may enable us to derive definitions of these intuitive fundamental relationships out of correlations of observable phenomena.

Aside from these general considerations of linguistic method, there are a number of specific points in which this book is weak. The section on phonetics is perhaps particularly so. Thus we find, 'the sound causes vibrations in the air' (6), whereas 'sound' is merely our name for the effect of these vibrations impinging on the ear. The descriptions of sounds and changes fail to provide for positional variants and for the diversity of languages (50, 63). On p. 55 is an impressionistic

chart of vowels; diagrams of the phonologically determined relations among the vowels of a language may be of interest, but it is hard to see the value of absolute phonetic arrangements for 'any language'. It was especially injudicious to place long vowels at points indicating particular differences in quality as against the respective short vowels. Difference in quality between length grades differs widely in various languages; in Estonian the qualitative difference between long and short grades is slight, between long and extra long grades, considerable. Jones' cardinal vowels, which Gray uses, may be of practical service, but have no more theoretical importance than any other vowels. Like many others, Gray tends to use articulatory descriptions for the consonants, but acoustic ones for the vowels.

In the morphology, Gray offers a formula of the structure of a word (159). Formulaic representation, which undoubtedly furthers our grasp of a set of relations and our ability to manipulate them, is of value only insofar as its application is exact. The formula given here presents two difficulties. First, it should not have been in the form of an equation, for that implies that the operations indicated in the left-hand side will yield the right-hand side. But addition of the various elements given here will not yield a word, since the formula omits the specific word-features, etc., which are not characteristics of the several parts, but are features of the combination process. Second, the notation $\sum_{m}^{0} D$ does not mean anything here, and Gray gives it no new notational value of his own.

The historical method is very well presented and utilized in this book, as was to be expected in view of Gray's work in historical linguistics. We may question only the rare remarks about the causes of change, as in 'fine distinctions between forms become worn down, not only through phonetic decay, but also because of sheer slovenliness on the part of the speakers' (97–8), or when Gray succumbs to the popular temptation of asking the cause of the Germanic sound shift (350). The absence of any discussion of dialect geography is surprising.

Gray's interest in the history of forms is such that he frequently offers speculations about their origin. E.g. 'the pronoun is, in all probability, the source of the categories of number and gender, and of case' (175; in all languages?); 'the personal pronoun is the most primitive of all parts of speech; the one for the first person was the earliest' (177). Such guesses conjure up a false picture of language stages which had only pronouns, and the like. Early stages can be

pictured, if at all, not by arguing the respective merits of various parts of our present structures, but by tracing the development of our structures as a whole. There is also the danger of giving psychological explanations of the origins of our structure, on the assumption that the categories of language are determined by preconceived ideas (though that still would not explain the structural form). Thus: 'The chief source of grammatical gender seems to lie in animism. . . . The masculine was the animate, concrete', etc. If a word, e.g. 'tree', had different genders, it was because 'the tree was sometimes regarded as a mere lifeless, sexless, inanimate thing (neuter), sometimes as a female (feminine, passive) living producer, and sometimes as a male (masculine, active) living producer. . . . It is interesting to note that the conclusions here reached on strictly linguistic evidence had already been attained in principle by the author of the fourteenth century *Grammatica speculativa*' (184–7).

Gray correctly says: 'For the present, the whole question of the origin of language must be ruled out of the sphere of scientific consideration' (40). Nevertheless, he permits himself guesses about the early development of language, a subject almost as dangerous. 'For the most part, the meanings of words, at first general, and perhaps vague, tend to become more and more specific' (252); they are vague to us only because we do not know the exact range of situations in which they were used. There is a suggestion 'That the earlier forms are the more complex, and the later the more simple, while the reverse holds true for the functions' (21). This interest in origins is connected with his view of the value of linguistics: 'Perhaps the most valuable service rendered by the study of language, at least from the point of view of general culture, is the light which such study casts on the history of a people' (10). Recognition of the value of linguistics as a science in itself and as throwing light upon the structure of human action, would have resulted in greater attention to structure.

Here and there appear value judgments which might well have been omitted: 'the more developed languages' (179); 'It does not seem pedantic to regard such losses [of the *I shall* : *you will* distinction] as retrogressions' (98); 'true education, as contrasted with the mere acquisition of facts and "practicality" which now passes for it, is impossible without knowledge of the Greek language and love of its literature' (429); 'Only when a minority-language becomes a means for violent subversive political activities does governmental action appear to be justifiable' (119; but it is always the government that decides what is subversive).

Of the errors that have slipped into the book, the following may be mentioned. Pictographs are not alphabetic beginnings (18), for they do not normally evolve into alphabets. *Khurrian* (380) is usually written *Hurrian*, and the reading *Kharrian* is impossible. The division of Akkadian (360) is wrong, for Assyrian and Babylonian are local dialects. Hebrew was spoken up to six (not thirteen) centuries before the masoretic vocalization (359); Semitic reconstruction yields not the root-type KWM (358) but rather KU:M. The theory that the Romance languages were differentiated by different substrata (336) requires considerable limiting. The arrangement of the Germanic languages (345–9) is not very satisfactory: Gothic is ascribed, 'in reality, to North Teutonic'; and the general character of the division into Low and High German is lost. The statements about Siouan (180) do not apply to the whole Siouan family; they are not true for Hidatsa. In view of the linguistic work that has been done on them, Shawnee might have been added under Algonquian and Southern Paiute under Uto-Aztecan in the valuable list of languages.

Such slips, however, are nearly always present in books that cover so wide a field. In the treatment of IE they are comparatively rare. There are excellent statements on phonetic law (75 f.) and on the study of names (122 f.). The major difficulties arise from the lack of structural analysis and from the mentalistic formulations. In his preface, the author offers the book in part as an introduction to Indo-European linguistics; it can only be regretted that he did not more definitely restrict it to that end.

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[The following review of Gray's FOUNDATIONS OF LANGUAGE is added as a valuable supplement, especially in its bibliographical notes, to the more general discussion by Harris.]

This new book is noteworthy, not so much for originality of thought and theory (for in this respect it falls behind the works of Bloomfield and Sapir), as for the collection and arrangement of material. By embodying the bibliography in the text, the author is able to criticize and evaluate his references from the historical viewpoint. Unfortunately, the intrusion of special bibliographies sometimes (especially in Chap. 13) interrupts the argument. It would have been better to mention the authors' names in the text and to add the specific citations in footnotes. In general, Gray's bibliographies present a good and careful selection, thus for Indic (317), Iranian (321), Slavic (355–6),

and throughout the last chapter; but for some subjects they are scanty, faulty, and out-of-date—in one case (Hamitic, 366) almost non-existent.

In his classification and description of the non-IE languages (Chap. 12), Gray has done well in compiling his information. Nevertheless, this chapter is somewhat disappointing. Only the section on Semitic shows obvious evidence of independent contribution, for in this field the author has studied and published himself. Little new material is offered on the other language groups, and no substantial advance is made over Meillet and Cohen (Les Langues du Monde, Paris, 1924), Schmidt (Sprachfamilien und Sprachenkreise der Erde, Heidelberg, 1926), or Kieckers (Sprachstämme der Erde, Heidelberg, 1931). Though Gray's treatment is the latest and most comprehensive for the English-speaking world, another twenty-five pages added to the chapter would have increased the value of the book.

A more serious objection is the somewhat unequal distribution of space devoted to the various groups of non-IE languages. Theoretically, of course, all groups are regarded as having equal linguistic importance; but in practice more attention is given to certain groups because of their additional cultural and historical importance, and because they have been more thoroughly studied. Those which have suffered most from inadequate treatment in the present work are Sino-Tibetan, the Asianic languages (378–84), and particularly Uralian and Hamitic (only two pages on the last).

In the quality of its results, the study of Uralian ranks with that of Semitic and Bantu. Though investigated by relatively few scholars, chiefly Finnish and Hungarian, this family is represented by consistently good work. Gray (367–9) should have mentioned the problems of accentuation, of root vocalism, and of the origin of vocalic harmony. Further discussion of loan-words also seems desirable (cf. 367 and 455), especially of borrowings by Hungarian from Turkic, by Finnic from Germanic and Slavic, and by Common Uralian from Indo-Iranian; the early date of the loans is important for the study of the source languages and for the history of peoples and languages in eastern Europe. Gray uses the correct name of the family, Uralian, but the absence of further discussion gives the false impression that all subgroups, including Samoyede, have similar positions within the group. Actually Uralian = Finno-Ugrian + Samoyede. The evidence for relationship between IE and Uralian is minimized.[1] Throughout,

[1] Finnish *kodan* 'hut' shows acc. sg. in -*n*, but this is from FU -*m* (cf. also Mordvinian -*ń*, but Vogulian and Lappish -*m*, Samoyede -*m*, -*p*). The study of

Gray seems to have rested a little too heavily, for his citations from Uralian, on Josef Szinnyei's Finnisch-ugrische Sprachwissenschaft[2] (Berlin, 1922). Finally, the Uralian bibliography (369) is too brief and somewhat antiquated; for a selection of the chief works see the note below.

. Gray takes up almost every subject within the limits he sets, but some readers may miss a more extended discussion of vocabulary, and of the cultural, historical, geographical, and political factors influencing language.

The following list of minor corrections and suggestions, largely bibliographical, may be of service to the reader.

63.20 ff.: Serbian also preserves a tone-accentuation. Attention should have been paid to the relative, as opposed to the absolute, divergency between use of stress and pitch in any language, and to the frequent struggle of the two for predominance, resulting (as in Modern Swedish) in partial concealment of one by another.

67.6 ff.: Gray's meaning is not clear. If taken in conjunction with the discussion of proclitics and enclitics (232-3), this passage would seem to introduce a new theory; but the use of terms is ambiguous. Nothing is said of the possibility that qualitative ablaut (*e* : *o*) may originally be connected with or due to pitch accent, accompanied by aspectual force. But this last is quite secondary and is not the cause or origin of the qualitative variation.

79.10 ff.: This paragraph is misleading. The term 'Grimm's Law' is obscure, for it is here not defined or qualified. What is meant is the ultimate carrying out of the High German consonant shift. Also there is no question of dialect mixtures, for the isoglosses of the German dentals do not coincide with those of the labials and the gutturals. One dialect may be consistent within itself, and may have a complete shift in one consonant series without a corresponding shift in the others.

158.10 ff.: The difference in vowel length between the two Latin forms *regis* and *rēgis* may be simply due to quantitative ablaut (normal

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the possible relationship of Uralian and IE has advanced far since the days of Henry Sweet and N. Anderson.

Björn Collinder, in his well-argued work Indo-Uralisches Sprachgut (Uppsala, 1934), lists about fifty plausible cognates, including the relative, personal, and demonstrative pronouns. In the field of morphology he cites verbal derivatives in -*sk*-, -*i̯*-, and -*n*-, many common suffixes in derivative nouns, some common personal endings, an ablative in -*d*- (-*t*-), and an originally pronominal plural in -*i*.

and extended grades). Nor is it certain that OHG *reichen* (cf. OE *rǣcan*, OIr. *riag*, Lith. *ráižytis*, all from IE **reiĝ-/roiĝ-*) is related to these Latin words, for the semantics are difficult.

158.35: Application oᶠ the laryngeal hypothesis to Skt. *sēdúr*, Lat. *sēdērunt*, Goth. *sētun* is at variance with the reduplication theory. See Lane. LANG. 15.199.

317: To Indic bibliography add G. Grierson, Dictionary of the Kashmiri Language, Calcutta, 1932.

326.24: There is also a recent etymological dictionary (in Armenian) by H. Adjarian, 7 parts, Erivan, 1926–35.

331–2: To Albanian bibliography add Stuart E. Mann, Historical Albanian-English Dictionary, London, 1938–; C. Tagliavini, L'Albanese di Dalmazia, Florence, 1937 (with etymological lexicon); Marie von Godin, Wörterbuch der Albanesischen und Deutschen Sprache I, Leipzig, 1930.

343: To Irish bibliography add Hessens Irisches Lexikon, Halle, 1933–.

354–5: The Lithuanian bibliography is inadequate. Add H. H. Bender, Lithuanian Etymological Index, Princeton, 1921; K. Buga, Lietuvių Kalbos Žodynas, Kaunas, 1924 (*A-anga*, with important introduction; unfinished); Niederman, Senn, and Brender, Wörterbuch der Litauischen Schriftsprache, Heidelberg, 1926–; C. Stang, Die Sprache des Litauischen Katechismus von Mažvydas, Oslo, 1929; other good works by Kurschat, Wiedemann, Leskien, Senn, etc.

366: The Hamitic bibliography is very scanty.   Add A. H. Gardiner, Egyptian Grammar, Oxford, 1927; Adolf Erman, Ägyptische Grammatik[4], Berlin, 1928; W. E. Crum, A Coptic Dictionary, Oxford, 1939; W. F. Albright, Vocalization of the Egyptian Syllabic Orthography, New Haven, 1934; Aaron Ember, Egypto-Semitic Studies, Leipzig, 1930; F. Calice and H. Balcz, Grundlagen der Ägyptisch-semitischen Wortvergleichungen, in WZKM, Beiheft I, Vienna, 1936; A. Erman and H. Grapow, Wörterbuch der Ägyptischen Sprache, 5 vols., Leipzig, 1926–31.

369: To Uralian bibliography add Zsirai Miklós, Magyar-Finn Összehasonlító Nyelvtan (FU comparative grammar), Budapest, 1936; Gombocz and Melich, Magyar Etymologiai Szótár (Hung. etym. dict.), so far 13 parts, Budapest, 1914–38; Zsirai, Finnugor Rokonságunk (FU affinities), Budapest, 1937; Szinnyei, Magyar Nyelvhasonlítas[7], Budapest, 1927; Budenz Josef, Az Ugor Nyelvek Összehasonlító Alaktana (FU comparative morphology), 3 vols., Budapest, 1884–94;

I. Manninen, Die Finnisch-ugrischen Völker, Leipzig, 1932; Kai Donner, Verzeichnis der Etymologisch Behandelten Finnischen Wörter, Helsinki, 1937; Siegmund Simonyi, Die Ungarische Sprache, Strassburg, 1907; Hans Jensen, Finnische Grammatik I, Glückstadt, 1934; E. Setälä, Yhteissuomalainen Äännehistoria I (common Finnish phonology) Helsinki, 1890.

383.2–8: In the Mysian inscription (if accurately transcribed) are two obviously IE words: *braterais patrizi išk* 'for brothers and fathers'; cf. Lat. *fräter*, etc., + IE ending *-ōis* of the *o*-decl. dat. plur.; and Gk. πατράσι, Skt. *pitŗšu*, etc. If *išk* = 'and', cf. Lat. *-que*, etc.; but it may be Lydian *eššk* 'this'. See J. Friedrich, Kleinasiatische Sprachdenkmäler 140–1.

392: To Sino-Tibetan bibliography add W. Simon, Tibetisch-chinesische Wortvergleichungen, Berlin, 1930; K. Wulff, Chinesisch und Tai, Copenhagen, 1934; S. Wolfenden, Outlines of Tibeto-Burman Linguistic Morphology, London, 1929; B. Karlgren, Études sur la Phonologie Chinoise, Stockholm, 1915.

407 (also 410, 416): To American Indian bibliography add Luis Pericot, América Indígena I, Barcelona, 1936.

312 and 457–8: There is no mention of H. H. Bender, Home of the Indo-Europeans, Princeton, 1922.

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URSACHEN DES LAUTWANDELS. By H. L. KOPPELMANN. Pp. 156. Leiden: A. W. Sijthoff's Uitgeversmaatschappij N. V., 1939.

A devastating attack upon van Ginneken's biological (or rather pseudo-biological) theory of phonetic law necessarily wins the sympathy of an American linguist. We Americans have at our doors such a linguistic laboratory as can scarcely be found elsewhere, and, even if we have shamefully neglected our opportunities, we have, with very few exceptions, learned better than to ascribe the articulations of a person or of a group to inherited peculiarities of the vocal organs. Nevertheless Koppelmann's refutation of the doctrine is clearly needed in Europe; for this reason the book is to be welcomed.

By way of illustration we may mention one argument (103–7) that by itself would be enough to dispose of van Ginneken. The Ottoman Turks resemble their neighbors in Asia Minor much more closely in physiognomy than they do the Turks of Central Asia, but their language has scarcely diverged at all in sound during some six centuries of

separation from the parent stock. During the same period the English language has suffered an extensive phonetic alteration without any noteworthy influx of foreign blood. Many equally cogent examples could easily be cited from America, but these will probably be more persuasive to European scholars.

The author's own opinion is that phonetic innovations are chiefly due to psychological causes; phonetic laws are analogous to fashions of dress or deportment. This is not a new idea; Jespersen holds essentially the same view, as Koppelmann well knows; and I have argued for it in an article[1] that he seems not to have seen. The precise form of the theory presented here is not very attractive; Koppelmann realizes that phonetic innovations spread, but he does not clearly recognize that most of the phonetic laws registered in our historical and comparative grammars involve such a spread, so that the important problem before us is: Why do phonetic innovations spread over the whole phonetic material of a region instead of infecting isolated words? The question treated here, as in most books on the subject, is rather: Why do phonetic innovations affect all the applicable material of the speech in the district where they arise? Even if the assumption underlying this question is ever proved to be true, and if the question itself is finally answered, that answer will still be of very limited importance for historical linguistics; the phonetic laws that we have inductively established mostly apply to more speakers than are likely to have been concerned with the origination of the change.

Far more distressing than the meagerness of the positive results is the frequent use in this book of the same loose method that invalidates much of van Ginneken's work, and that exposes too many current books and articles on linguistics to the just scorn of physical and biological scientists. For a time it seemed that linguists had banished the term *euphony* from their treatises, but here we find, not the word, to be sure, but the point of view with all the subjectivity and logical futility that attached to it seventy-five years ago. Koppelmann calls certain selected languages 'ästhetisierend': Italian (but not Latin), Spanish, and Greek; and he ascribes some of their phonetic laws to a liking for certain sounds and combinations of sounds and a dislike for others, purely as a matter of aesthetics.

The book is full of far-reaching generalizations based upon a shockingly narrow statistical base. Perhaps the worst instance is the classification (76–96) of all languages as Diskretionssprache, Interieur-

[1] JAOS 44.38–53 (1924).

sprache, and Rufsprache.   The author has observed that in a Javanese city there is a lack of privacy on account of crowded living conditions and thin walls; hence the people habitually speak in low tones so as not to be overheard by the neighbors.   It is argued that such a secretive language cannot have a strong stress accent; and, apparently just for this reason, French is put into the same class as Javanese.   At the other extreme stand certain languages spoken on small islands, where speech must normally be shouted in rivalry with the roar of the sea; here also a stress accent is out of the question, since all syllables must be as loud as possible.   Typical examples are the Polynesian languages and the Ainu of Japan.   Between these two groups are the languages of cool climates, whose speakers do much of their talking within doors. Here the neighbors cannot overhear, and there is quiet.   Here alone a stress accent is possible.   One is surprised to find Arabic reckoned to the Interieursprachen; but the author once spent two weeks in an Arabic house in Algiers, and he found there the peculiar characteristics of this group, including the stress accent.

Is this science?

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Mélanges de linguistique offerts à Charles Bally. Pp. xii + 511.   Genève: Georg et Cie., 1939.

When G. Gougenheim wrote his survey of current tendencies in the field of French syntax he did not attach much importance to the Genevan school of Saussure and Bally; he emphasized rather the disciples of Tobler and Karl Vossler in Germany, and the work of Brunot and Lucien Foulet in France.[1]   The Genevan school loomed much larger in 1939, thanks to Charles Bally's Linguistique Générale et Linguistique Française (Paris, 1932), the second edition of his Le Langage et la Vie (Zurich, 1935), and the association of the school with the linguistic circle of Prague.   I do not believe that many Americans—the late Edward Sapir being a prominent exception—have appreciated fully the linguistic theories of this group.

Among Romance linguists these methodologies are recognized today:

1. Diachronic:

(a) historical and positivistic observation, an evolution of the methods of the Neo-grammarians of Leipzig;

[1] Où en sont les études de français, publié sous la direction d'Albert Dauzat, 107 (Paris, 1935).

(b) dialectology and linguistic geography, including an interest in possible substratum language influence.

2. Synchronic (devoted mainly to syntax and morphology):

(a) descriptive, without much reference to psychology and with historical methodology in the background: Tobler, F. Brunot, etc.;

(b) new idealistic philology of Karl Vossler: language is a reflection of the person and of the cultural outlook of a people; historical study is useful 'like the buttons on a suit of clothes';

(c) the Genevan school: a rigid separation of synchronic study of language as a function from diachronic or historical methodology; language should be studied as mirrored in itself and for itself, although this involves a use of logic and of some psychology;

(d) the purely psychological investigation of language as described by Jacques Damourette and Édouard Pichon, Des mots à la pensée: essai de grammaire de la langue française (Paris, 1927–).

The methodology of the Genevan school was made generally accessible in 1916 when Bally, Albert Sèchehaye, and Riedlinger issued Saussure's Cours de Linguistique Générale. Since then, Bally's publications, including his numerous articles, and H. Frei's Grammaire des Fautes (1929) have elaborated and crystallized the concepts and the terminology. They emphasize the study of la parole—the functional operation of language. Language is a system with reactions based upon its component parts. An excellent way to study such systems is to compare one's mother tongue with one or two contemporary languages of a different family. To do this one must be familiar with certain units and general concepts. The syntagma is a unit consisting of a thing spoken of and the element which characterizes it: a determinate and its determinant. A predication is a total syntagma; a smaller combination of 1 and 1' (determinate and determinant) is a partial syntagma. A word is a lexical sign which when modified is actualized (or functionalized). When a word, or even a single phoneme, is not actualized, it is present in its simple state—it is sign zero; but when the sign is combined with a morpheme or is used in another grammatical category (hypostasis), or when a phoneme is combined with voice, yod, or aspirate, it is said to be characterized or positivized. An ideal would be linearity of meaning, or monosemie; but this is rare, because a signifier (the basic sign) may 'cumulate' many significations, as in hypostases or figures of speech where its grammatical or logical category is inverted. The opposite of cumulation of significations is

known as fractionizing. Saussure emphasizes the law of opposition: such a word as *paperasse* retains additional meanings because *papier* exists beside it.

An investigation of errors in language helps us to comprehend the static system of a language. Frei traces them to five causes: association, differentiation, brevity, invariability, and expressivity. The last is a powerful influence on style: Bally equates the hidden expressiveness of some unpremeditated speech with some of the finest style of the creative literary artist. This is one of the hidden forces which form la parole.

Functional grammar, opposed to static grammar in that it shows language in action, illustrates how language resources are adapted for the common need. The Genevans do not believe that language is progressing towards an ideal state. They observe that the lowest peoples in India have a rich and expressive tongue; that Russian, on the other hand, a language so masterfully handled by Tolstoy and Turgenev, is often impoverished in its functions; and that French has passed through a rich stage to what is now orally a less expressive one. In examining French, Bally notes what he calls progressive sequence (order and rhythm), a struggle against non-linear signs, and a condensing tendency.

With this highly condensed summary in mind we may proceed to an examination of the Mélanges Bally. The articles are of three kinds: those that deal directly with certain theories expressed by Bally and his followers, those concerned with synchronic syntax in a more general way, and those that are frankly historical.

In our opinion the best is the contribution of J. Vendryes, Parler par économie (49–62), in which he unquestionably has in mind Bally's remarks on 'tendence condensatrice' (Ling. Gén. 285–354), though he does not refer to them. Vendryes here expounds very clearly the relative spheres of functional and static grammar: functional grammar is a study of verbal economy. Von Wartburg (3–18) emphasizes the value of his FEW in synchronic study, thus reaffirming a theory he has always held: that diachronic and synchronic study are interdependent (witness what might be called Gilliéron's law: that when a word has become ailing historically it must be cured or replaced synchronically). In opposition to von Wartburg, A. Sèchehaye (19–29) states that synchronic study is more basic than diachronic, though he admits that Saussure was overemphatic in insisting on the absolute separation of the two. Elise Richter, inspired by a passage of Bally's on the hidden

spontaneous factors in language, demonstrates (31–47) how two such factors—perseverance (of one element) and association (of two elements)—have aided and hindered each other to make for linguistic change.   Her discussion is valuable, but it goes far afield of the Genevan school.

The late Prince Trubetzkoy (75–82) distinguishes more sharply than Bally has done between the predicative or total syntagma and the partial syntagma, and asserts that a predicative tends to neutralize the distinction between a definite and an indefinite determinant. R. Jacobson (143–52) elaborates somewhat upon the concept of sign zero, a concept of great value which has escaped many linguists.   He repeats the comment of V. Brøndal, who has elsewhere demonstrated the chiasmus in the relation of morpheme to meaning.   Thus, where a lexical sign is zero (absence of morpheme) there is characterized plurality of meaning; where the sign is characterized with morphemes there is zero or linearity of meaning.   In its simplest form Brøndal's law states that a morpheme or phoneme complex in one way is simple in another. After Jacobson's article the reader should turn for illustration to the articles by S. Karcevski (231–50) and B. Havranek (223–30) on the aspects of the Slavic verb.

Passing over the many other articles of interest in this volume, we must add a few remarks on its use in America.   Romance linguistics are ailing today in this country, because so many of our Romance scholars conceive of French linguistics as a single course in Old French half-heartedly presenting the rules of phonology (or some of them), sometimes followed by a brief generalizing survey of the history of the French language.   We must reform our methods.   We must teach Old French phonology and historical morphology with renewed vigor, with the minimum objective that the student shall know how to etymologize when he has completed the course; and we must continue his training with a good course in the problems of synchronic morphology, syntax, and stylistics, so that he may be able to follow the new methodologies in print.

This volume, in which Charles Bally has been so fully honored, should provoke considerable thought among American linguists, even if it does no more than persuade them to read his Linguistique Générale et Linguistique Française.

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CONTRIBUTIONS À LA LINGUISTIQUE DES NOMS D'ANIMAUX EN INDO-EUROPÉEN. By ELISABETH RAUCQ. (Rijksuniversiteit te Gent, Werken uitgegeven door de Faculteit van de Wijsbegeerte en Letteren 88.) Pp. xiv + 109. Antwerpen: De Sikkel, 1939.

In this investigation of the semantemes and idea-signifiers of pre-dialectal Indo-European, the author is a disciple of Van Langenhove, and therefore of Kuryłowicz and Benveniste. She has chosen for her illustrative material the names of common animals because these, along with plants and the like, she considers to have been static in late predialectal IE. The important section of this study is Chapter 5, where Mlle Raucq gives her general considerations in the light of Van Langenhove's Linguistische Studien (Antwerp, 1936 and 1939). At the base of IE nominal semantemes she admits a biliteral signifier of type *$_{\vartheta}T$, a consonantal diphthong in which T is any consonant. Such a biliteral element could be pressed together, or it could be expanded to a triliteral element by the addition of a vowel. A special series of cases arise when T is a sonant (expressed by R for T). The primitive semanteme in early IE arises from a composition of two such biliteral or triliteral elements, which are in opposition in the relation of determinate and determinant. Such a semanteme, made up of two signifiers, could, in turn, form a syntagma with another similar compound. In the period of verbal formations a further biliteral signifier with apophony was often added, for example such a reduced signifier as the suffix *-t which denotes completion of action. The process may be illustrated by the following case: *$_{\vartheta}k$ and *$_{\vartheta}(e)r$ result in *kr; *$_{\vartheta}y$ and *$_{\vartheta}n$, with apophony of the first element, form *yen, and with further apophony *in. To the combination *$kr + in$ add the signifier *-t denoting completion (derived by apophony from *$_{\vartheta}t$), and the final result is *$krint$-. Such combinations, to use the language of the Geneva school, are motivated in opposition.

This type of linguistic reasoning is still in its experimental stage, and no one as yet can judge its ultimate value. We must read with care the studies of Benveniste, Kuryłowicz, Van Langenhove, Raucq, and others.[1]

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[1] We ask ourselves whether such research has brought scholars definitely nearer to the problem of the ultimate relations between IE and Semitic, a problem which Meillet in some of his last reviews considered a pressing one.

INTRODUZIONE ALLO STUDIO DELLE LINGUE GERMANICHE. By VITTORE PISANI. (Manuali Linguistici del R. Istituto Superiore Orientale di Napoli, No. 2.) Pp. 112. Roma: Edizioni Universitarie, 1940.

Pisani is distinguished as an Indo-Europeanist rather than as a Germanist, so that the present work is especially useful for the beginner. He is conservative in his judgments, and his remarks are based on an excellent bibliography (107–11). He does not fail, for example, to list prominently the Comparative Germanic Grammar by Prokosch (Linguistic Society of America, 1939).

In his classification of the Germanic dialects (21–5) he makes no comment upon the closer relationship between the eastern and the northern groups as compared with the western. He speaks of Old Icelandic as Old Norse par excellence, and stresses the value of Old Norse as a literary koiné. For him, Scandinavia is the home of the Germanic peoples. The theory of a substratum is repugnant to him (27), but he admits marked Celtic influence on Germanic in the spread of umlaut as well as in vocabulary borrowings. Concerning the labiovelars (35–6), in two lines only, he admits the old theory that the labial was lost first before $\bar{o}$ and $\bar{u}$ (see G. S. Lane, LANG. 15.197), but he makes no mention of Kluge's law, except to treat fimf as a special case (69). In his discussion of atonic final syllables (48) he fails to discuss the bimoric and the trimoric values. The two consonant shifts and Verner's law are presented clearly and simply, with little attempt to give chronology and none to suggest cause (34–8). The material on the second shift should have been somewhat amplified.

The IE aorist origin of the pulral endings in the preterite of the strong verbs is accepted (75–6). In a note Pisani admits, probably after Prokosch, the aorist source for the second person singular in West Germanic. With regard to the preterite formation of the weak conjugation the author agrees that the theory of the compounding with *dhē- is again in vogue; but he himself is not sure of it. For him the -ēhund in Gothic sibuntēhund corresponds to -ηκοντα and the -t- is that supposedly found in *septm̥-t, *neun-t, and *dekm̥-t. He agrees with Zupitza in assuming that the last element in ainlif and twalif is to be related to lib- as in bi-leib-an.

This book is an excellent manual. It is to be hoped that the language in which it is written will not impede its use by students in America.

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REVIEWS ORIS SLOVENSKEGA KNJIŽNEGA IZGOVORA. By FR. BEZLAJ. (Raz-
prave Znanstvenega Društva v Ljubljani, 17; Filološko-lingvistični
Odsek, 5). Pp. 124, with diagrams and plates. Ljubljana, Učiteljska
Tiskarna, 1939.

This 'description of Slovene literary pronunciation', issued in the
philological-linguistic section of the Proceedings of the Scientific Society
of Ljubljana, is the first treatment of Slovene by the methods of instru-
mental phonetics. As such, it is very useful for the data it contains;
but inevitably it suffers from the limitations of its methods, and leaves
the reader with many questions unanswered.

The Introduction (6–9) describes the methods of the investigation,
and the five informants, of whom three were natives of Ljubljana (one
being the Slovene linguist, F. Ramovš) and two had studied there.
The methods were the usual ones of instrumental phonetics—artificial
palates, photographs of the lips, X-ray photographs of the vocal organs,
kymograph recordings of accent and quantity, microscopic examination
of melody traces. The author specifically mentions as his models
Rousselot and his own teacher, Chlumský of Prague.

Consonants are examined on pp. 10–47. It is noted that p, t[1] are
stronger than b, d, m, n; but before weak-stressed vowels p, t are almost
as lax as b, d. For f, which in Slovene as elsewhere in Slavic is relatively
a new phoneme, occurring in borrowed words, only the labiodental
pronunciation exists; v, however, is [v] before loud-stressed i, e, o, but
[β] (without friction and with some lip-rounding and raising of the back
of the tongue) before other vowels and before consonants; after a vowel,
closing a syllable, only non-syllabic [y] is found; before weak-stressed
vowels, we have [w].

The phonemes t, d, n are said to be alveolar (15), but the diagrams on
pp. 22 and 23 show denti-alveolar articulation. For nj of the standard
orthography [n] is pronounced ordinarily, or, with an attempt to imitate
Serbo-Croatian, [nj] or [jn]. Before j, t and d are slightly palatalized.
Before weak-stressed vowels, t and d are said (18) to be articulated
rather far back but to be different from Čech t ˇ, d ˇ, which are frontal
(anterior dorsal) stops; no X-rays in this position are shown. The
affricate c is more alveolar than stressed t; the corresponding voiced
sound exists only by assimilation to a following voiced sound, and is not
a separate phoneme. The affricate č has a wider rill than has c, and in

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[1] In this review, phonemes are represented by roman letters, spellings by italic
letters, and sounds by roman letters in square brackets.

Ljubljana is more 'palatal' (advanced frontal?) than in the rest of the
Slovene area; the corresponding voiced sound occurs only by assimila-
tion. The spirants s, z are alveolar, while š, ž have a wider rill and are
frontal; ž is said to be further back than š (28); both of these sounds
are more 'palatal' in Ljubljana than elsewhere.

The lateral l is clearly alveolar, by contrast with t, d, n. Orthographic
lj is pronounced [l], or, affectedly, [l] plus [j]. Syllabic l is the same as
the consonantal sound: *Ljubljana* is pronounced [l̩blana].

Slovene r is always a flap, made with a single tap; initially in a word
after a final consonant or a pause it seems to be preceded by a very
short [ə] element (this is not made clear in the discussion but appears
from occasional phonetic transcriptions and other data). Syllabic r,
so called, is [ərə], with a single flap between the vowel elements.

The back consonants k, g vary in position with the following vowel.
Occasionally a very back k is heard before *v*. Usually k is very lax;
g is sometimes a very weak stop, almost a spirant, especially before
weak-stressed vowels.

Orthographic *h* (corresponding to general Slavic x) is described as
mediopalatal (the author calls it 'velar' in the brief French summary at
the end of the book), with fronting before front vowels. The X-ray
shows the tongue far from the roof of the mouth, so that one can assume
there is no friction. The reviewer must here point out a serious lack
not only in the methods of instrumental phonetics, but also in our gen-
eral descriptions of sounds: the artificial palate could not of course be
used to determine the palatalization of the h, as Bezlaj admits; and he
rather apologetically states that this palatalization was noted by ear.
Is not the ear of a trained phonetician also a recording instrument,
and a very good one at that? And is it not the only instrument to use
for some things until we have means of recording and deciphering
certain acoustic effects? A second lack concerns a vital factor in the
description of the sound in question; in all the Slavic languages known
to the reviewer (and he has heard them all except Bulgarian and some
of the minor dialects), the phoneme proceeding from Proto-Slavic x is
characterized, for the West European expecting something like the
German *ach*-sound, by its h-like nature; there is indeed a slight raising
of the tongue in the k-position, but there is practically no friction in
this position, whatever friction there is being through the open glottis;
this is true even of Čech, which has the strongest and most *ach*-like
sound of all the languages. The Slovene and Serbo-Croatian sounds are
the most h-like. For the description of x and h sounds, and indeed for

all spirants, it is important to note whether they are normally fricative, as s, or normally frictionless, as English h, or in some way depart from the norm of friction. No existing system of sound-classification takes this distinction into account. In the case in point, the statement that Slovene *h* is mediopalatal conveys no indication of its real sound because nothing is said about the degree of friction, though, as has been stated, this can be surmised from the X-ray diagram and from other data.

All Slovene consonants are slightly palatalized by a following front vowel, and all are more lax before weak-stressed vowels than is usual in the other Slavic languages. There are no aspirated stops, and no palatal or palatalized sounds, except j, which is slightly spirantal only between vowels, and entirely frictionless elsewhere.

No statements are made as to distribution of consonants in various positions or in groups, so an accurate phonemic summary is difficult. It seems, however, that the consonant phonemes are: p, t, k, b, d, g, c, č, f, s, š, z, ž, l, r, h, m, n; orthographic *j* is probably in complementary distribution with i, and part of that phoneme, and *v* may go with u; it has been stated elsewhere that Slovene has no final voiced stops or spirants, but Bezlaj says nothing about this; his recordings are based on initial or intervocalic consonants; he has one phonetic transcription with [k] for orthographic final *g*, but other phonetic transcriptions show final [z] and [ž].

It is not here possible to discuss the vowels at length. There are marked differences in quality and quantity between short loud-stressed, long loud-stressed, and short weak-stressed vowels. The weak-stressed vowels are much slurred in the direction of [ə]; this is the regular substitution for all weak-stressed vowels in the dialects, but the standard language retains weak-stressed vowels of other qualities; weak-stressed pretonic vowels are quite narrow, but not tense. Short loud-stressed vowels are all open and lax. The back vowels are unrounded, but the lips are slightly less spread for u, o than for the other vowels. The following vowel sounds are indicated: loud-stressed long—[i, e, ɛ, a, ɔ, o, u, ə]; loud-stressed short—[ɪ, æ, aˑ, ω, ʊ, ə]; weak-stressed short—[i, ɪ, e, ɛ, a, ɑ, ɔ, o, ʊ, u, əˑ]. Phonemically, there are at least six short vowels, loud-stressed and weak-stressed—i, e, a, o, u, ə, and perhaps eight long vowels, loud-stressed only—iˑ, eˑ, ɛˑ, aˑ, ɔˑ, oˑ, uˑ, əˑ.

The quantity of vowels in hundredths of a second is given in some detail. It is evident that the relative inherent quantities are maintained, so that the descending order of length a, o, e, ə, u, i is found with

few exceptions under all accent and quantity conditions, only the absolute figures differing. Of the consonants, voiceless are longer than voiced, stops longer than spirants, nasals and liquids shortest (r especially short).

Accent was examined in short phrases like *to je grâd* 'this is a city', etc. The accents, which involve principally stress, with accompanying tonal variation (as in Serbo-Croatian, cf. my articles in LANG. 16.29–32 [1940] and Le Maître Phonétique 69.13–15 [1940]), are phonemic, though there is insufficient data in Bezlaj on which to base a clear statement of the system. The long falling may occur on the ultima, penult, or antepenult, and is generally accompanied by level or rising pitch through the first half of the vowel, and then falling pitch as the stress decreases. The long rising, occurring on the penult and preantepenult, as well as in monosyllables, shows falling or level stress and pitch at the beginning and rising loudness and pitch at the end of the vowel. The short falling, which occurs only in monosyllables, or on the ultima, shows level or rising pitch followed by rapidly falling pitch as loudness decreases.

The probable phonemic statement is that there are eight vowel phonemes—i, e, ε, a, ɔ, o, u, ə, and three prosodic phonemes (accents); one, the 'short falling', does not occur on ε and ɔ, but may occur with all other vowels, and is actualized as weak stress on non-final syllables and loud stress on the final or the only syllable, provided there is no long accent in the word; the two long accents, 'long falling' and 'long rising', may occur with any vowel, and are always actualized with loud stress and long quantity; a word must have at least one 'short falling' accent, unless it is a monosyllable, but may be without any long accent, and may not have more than one long accent. This summary, which is the reviewer's and not Bezlaj's, is certainly not definitive until further data on distributions is available.

Bezlaj's study is important, if for no other reason than that it is a pioneer work. But it shows clearly how deficient are our classifications of sounds, and points up the necessity of bearing in mind phonemic analyses when making any kind of phonetic studies.

Incidentally, it appears that, though Slovene is one of the newer literary languages of Europe, it has already adopted the Western culture pattern that seems to insist on the orthography of a language being as historically conservative and as far away from pronunciation as possible. For the reader coming to Slovene from other Slavic languages, this is

fortunate, but it helps not at all in understanding the spoken language, and must be hard on the native children who have to learn to spell.

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PHONOLOGIE: EEN HOOFDSTUK UIT DE STRUCTURELE TAALWETENSCHAP. By N. VAN WIJK. Pp. xvi + 207. 's-Gravenhage: Martinus Nijhoff, 1939.

This work forms a useful companion volume to N. Trubetzkoy's Grundzüge der Phonologie (TCLP 7, Prague, 1939). It serves to bring together in one place the views not only of Trubetzkoy himself, but of all his school, and makes it possible to trace the development of their thinking and point of view. In addition, the views of others (Sapir, Twaddell, Hjelmslev, etc.) are cited and discussed, and van Wijk contributes his own critical commentary to most of what he cites.

It is perhaps regrettable that the book is in Dutch, but the author has been careful to cite in the original French, German, or English, and to use terms in international form: 'I have not tried to find Dutch words for the phonological terminology; whenever a Dutch term was needed, I have formed it on the model of other languages. . . . Phonology is not a special Dutch science, but an international one' (Preface xiv). Such lack of linguistic nationalism is highly commendable, and one can only wish there were more of it.

Van Wijk follows Trubetzkoy in his use of the term *phonology*. In English we have the incomparably superior term *phonemics*, which leaves us free to use *phonology* in its old and widely established usage as a general term for all the phenomena concerned with the production and use of sounds. Van Wijk and others who use *phonology* in the sense of *phonemics* have no general term to include phonetics and phonemics. Since Trubetzkoyan 'phonology' is certainly not the last word in the field—there can be no 'last word' in science—it is to be hoped that a terminological revision will soon be made so that an equivalent of English *phonemics* will find its way into French, German, and other languages (*phonématique, Phonematik*). In the rest of this review I shall use *phonemics* to translate *phonologie* in citations (the Dutch part of these being in each case translated into English by me).

The divisions of the book are: Introduction, 1–24 (phonemics and the older linguistics; the formulation of linguistic systems; phonemics and phonetics; the beginning of phonemics and its further history); Chapter I, Synchronic phonemics, 25–144 (phonemic systems: vowel and con-

sonant phonemes; vowel systems; consonant systems; accent, intona-
tion, quantity; short and long, single and double consonants; phonemic
oppositions; extra-phonemic variations; neutralization; functional load:
relative frequency of phonemes and groups of phonemes; the definition
of the phoneme; how phonemes are combined in larger units; morpho-
phonemics, so-called; sentence phonemics); II, Diachronic phonemics
and the general history of sounds, 145–96 (phonemic and non-phonemic
sound-change; phonemic systems in their historical development; non-
phonemic tendencies of sound-change; diachronic relations between
phonemic and non-phonemic phenomena; phonetic laws; general pho-
nemic and non-phonemic laws); III, Phonemics and other linguistic
sciences, 197–207 (phonemics and phonetics—phonemics and other
sciences of linguistic symbols; phonemic relations between languages:
linguistic differentiation). The first part is very largely Trubetz-
koyan—too much so; in the second van Wijk contributes some good
ideas of his own; the third is merely a sketch, and could well have been
much longer.

The general criticism must be made first that the book as a whole
suffers from a mentalistic attitude. The author is constantly talking of
'psychic' values, and indeed distinguishes la langue from la parole by
indicating that the former is the psychic equivalent of the latter. This
may all be so, but as linguists we can describe only linguistic facts,
objectively recorded and analyzed, and have no means of knowing
anything about 'psychic' values.

It would be impossible to take up all the discussible details—the
book is rich in examples, but some may be selected here and there.
Van Wijk cites (15) the definition of phonemics given in the Projet de
Terminologie Standardisée (TCLP 4.309–23 [1931]), together with
supporting definitions, and points out (16) that la langue includes,
besides the functional contrasts mentioned in the definitions, also
'many other sound-phenomena, namely all the smaller or larger sound-
variations within the phoneme, whether or not noticed by the speaker
and hearer, which have no symbol-differentiating function.' This point
is extremely important, and has been constantly overlooked in the in-
sistence on contrasts. Van Wijk lists the subject-matter of phonemics
thus (16): '1. What phonemes are there in the language under considera-
tion? 2. How are these phonemes grouped systematically? 3. What
particular qualities of the phonemes and what phenomena of intonation,
quantity, accent, pitch are relevant for word-phonemics? ... 4. What
oppositions are relevant for sentence-phonemics? 5. What rules of

structure determine the forms of syllables, bases, desinentials, and words? 6. What is the functional load of the several phonemic oppositions? 7. What are the relations between phonemic and non-phonemic phenomena? 8. What are the forces which determine the diachronic development of the phonemic system and its constituent parts, and how do these forces work?' (In 5, I use *base, desinential* to translate *semanteem, morpheem,* terms taken by van Wijk from K. Bühler.)

This statement of the problems of a phonemic analysis of a language could hardly be improved upon. However, in the application to specific examples, van Wijk follows too closely the conventional analyses, and forgets his point 2. For instance, the argument (28) for the monophonematic character of Dutch *ei, ui, ou* (and the same applies to the English sounds in *bite, boy, boat,* and others) can be shown not to hold if the total structure of the syllable and the behavior of the phonetically short vowels and of the phonetically long vowels and diphthongs are examined. In Dutch, as in English, the long vowels and diphthongs behave alike, and they can be shown to pattern similarly to combinations of a short vowel plus a consonant in the same syllable; the three Dutch diphthongs *ei, ui, ou* are probably to be analyzed as consisting respectively of front lower mid vowel plus *j,* central lower mid vowel plus *j,* and back lower mid vowel plus *w;* the evidence for such an analysis would far exceed the scope of this review.

In the discussion of vowel systems (31 ff.), the Trubetzkoyan practice of putting *a* at the top and *i, u* at the bottom of vowel diagrams is followed. This practise is objectionable because it is exactly contrary to the physiological relations of vowels; it also leads to putting *u* at the left and *i* at the right, which is misleading when speaking of front and back vowels. The usual and phonetically justified arrangement $i \quad u$ should be adopted in all phonemic discussions, whether by Tru- a betzkoy's followers or by others.

The discussion of the vowel systems is thoroughly confused by the lack of separation between segmental and prosodic phonemes, so that one never knows whether, say, a long and a short vowel pair consists of two vowel phonemes or of a single vowel with two different prosodemes of quantity; the correct analysis in any given case depends, of course, on the total structure involved. (Incidentally, English *would* and *wood,* cited [35] as examples parallel to *bit, beat,* have, of course, the same vowel phoneme; *full, fool* would serve.)

In the discussion of consonant systems we have the usual type of tables of phonemes arranged by phonetic characteristics; this is forgetting that the true phonemic relationships may often be quite different from the phonetic ones, and that phonemic tables must be based on function and structure, not on type of sound. I may refer to my paper, La Systématique des Phonèmes du Polonais, Acta Linguistica 1, no. 3 (1939), for examples of what I consider correct phonemic analysis and tabulation.

The sections on accentuation, short and long consonants, phonemic oppositions, extra-phonemic variations, and neutralization (50–84) follow Trubetzkoyan doctrines exactly, and could be criticized only by means of a lengthy discussion of details. Moreover, it would be better to make that criticism in a review of the Grundzüge than here.

The discussion of the definitions of the phoneme mentions all those that have appeared in print, but van Wijk suggests no definition of his own. He dismisses the projected attempts at closer definition of all linguistic techniques made by Hjelmslev and Uldall in their Outline of Glossematics (1937) as only adding to the terminological confusion; such an attitude implies satisfaction with present terminology and techniques—a satisfaction that the reviewer definitely does not share; the complete work by the Danish scholars, when it appears, certainly will not solve all our problems, but it will be very much worth studying and will represent an advance toward the goal of making linguistics a real science.

The lack of precise logical thinking by van Wijk is clearly shown in his discussion of 'morphophonemics, so-called' (126 ff.). This is almost the only point of real difference with Trubetzkoy: van Wijk dismisses morphophonemics (Trubetzkoy's Morphonologie) as merely a part of morphology. A scientific approach to the distinction between phonology and the rest of linguistics (cf. Hjelmslev's cenematics and plerematics) shows clearly that Trubetzkoy was right in considering morphophonemics part of phonology, even though one may differ with his definition of the field.

The treatment of sentence phonemics by van Wijk (132 ff.) shows again the lack of discrimination between different levels of analysis. Sentence phonemics is not solely a matter of 'intonation' in the narrow sense: it involves stress, tone, and quantity on the prosodic level, and probably also often segmental phenomena. I cannot of course comment on the details of van Wijk's analysis of Dutch sentence-phonemics, as I am not sufficiently acquainted with the language.

In the chapter on diachronic phonemics van Wijk emphasizes the

all-important fact that 'to the linguistic system ... belong not only the phonemes ... but also the combinatory and concomitant variations' (148), and goes on to show how important the latter are for historical changes. In the details of the examples (Russian, English, Dutch) there is much to question and differ from, however. Nowhere does van Wijk cite Bloomfield's succinct statement, 'Phonemes or classes of phonemes may gradually change. ... Such change is *sound-change*' (A Set of Postulates for the Science of Language, LANG. 2.162 [1926]). I would myself suggest that this statement might be more unambiguously made by the phrase 'phonemic systems change'.

In summary, van Wijk's Phonologie is well worth reading, and every linguist who concerns himself with phonemic problems (as who of us does not nowadays?) should consult it from time to time. But what stands out most clearly from this book is how far our science is as yet from agreement even on fundamental assumptions. And phonology, with its subdivisions, is probably the field most advanced in this respect! Far from discouraging one, however, this state of affairs should encourage further efforts at definition and precision; many other works like this one of van Wijk's are called for.

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ÉTUDES PHONOLOGIQUES DÉDIÉES À LA MÉMOIRE DE M. LE PRINCE N. S. TRUBETZKOY. (Travaux du Cercle Linguistique de Prague 8.) Pp. 348. Prague: Jednota Českých Matematiku a Fysiku, 1939.

The table of contents lists, after an editorial notice, two papers by Trubetzkoy.[1] These are followed by two groups of papers: the first, under the heading of general phonological problems, by Benveniste,[2] Cohen,[3] Durand,[4] Hjelmslev,[5] Kořínek,[6] Novák,[7] Pos,[8] Skalička,[9] Tesnière,[10] Vachek;[11] and the second, under the heading of synchronic

[1] Wie soll das Lautsystem einer künstlichen internationalen Hilfssprache beschaffen sein? (5–21); Aus meiner phonologischen Kartothek [Dunganic dialect of Chinese] (22–6).

[2] Répartition des consonnes et phonologie du mot (27–35).

[3] Catégories de mots et phonologie (36–42).

[4] Essai sur la nature de la notion de durée vocalique (43–50).

[5] Note sur les oppositions supprimables (51–7).

[6] Laut und Wortbedeutung (58–65).

[7] Projet d'une nouvelle définition du phonème (66–70).

[8] Perspectives du structuralisme (71–8).

[9] Bemerkungen über die Entstehung der Phonologie (79–82).

[10] Phonologie et mélange de langues (83–93).

[11] Zum Problem der geschriebenen Sprache (94–104).

phonology, by Bloomfield,[12] Broch,[13] Deeters,[14] Dłuska,[15] de Groot,[16] Isačenko,[17] Tomás,[18] Porru,[19] Sommerfelt,[20] Swadesh,[21] Trager,[22] Baader,[23] van Ginneken,[24] Gougenheim,[25] Haudricourt,[26] Martinet,[27] Holger Pedersen,[28] Trnka,[29] van Wijk,[30] Trost,[31] Havránek.[32] Trubetzkoy's bibliography and additional notes by Trubetzkoy[33] are given in an appendix.

The general or theoretical papers in this volume either imply that enough descriptive material is available so that one may make generalizations about all or most or certain kinds of languages, or present techniques or other programmatic procedures; and one descriptive paper gives a synoptic list of Mandarin phonemes as a model for a survey of all the languages in the world. The value of proposed techniques, models, and indeed linguistic theory in general, can best be measured by the future historian in terms of usefulness in the presentation of languages not known or inadequately understood. When the linguistic history of the 20th century is written, one may guess that some of the phonemic papers rather than the theoretical papers in this

[12] Menomini morphophonemics (105-15).

[13] Numerusunterschied durch Intonationsunterschied im Ostnorwegischen (116-29).

[14] Phonologische Bemerkungen zum baltischen Deutsch (130-37).

[15] Die tonische Verse im Polnischen (138-48).

[16] L'accent en allemand et en néerlandais (149-72).

[17] Zur phonologischen Deutung der Akzentverschiebungen in den slavischen Sprachen (173-83).

[18] Dédoublement de phonèmes dans le dialecte andalou (184-86).

[19] Anmerkungen über die Phonologie des Italienischen (187-208).

[20] Le système phonologique d'une langue australienne (209-12).

[21] A condensed account of Mandarin phonetics (213-16).

[22] The phonemes of Castillian Spanish (217-22).

[23] Der Charakter des 'uraltgermanischen' Konsonantensystems (223-32).

[24] Ein neuer Versuch zur Typologie der älteren Sprachstrukturen (233-61).

[25] Réflexions sur la phonologie historique du français (262-69).

[26] Quelques principes de phonologie historique (270-72).

[27] Rôle de la corrélation dans la phonologie diachronique (273-88).

[28] Zur Theorie der altgriechischen Palatalisierung (289-91).

[29] Phonological remarks concerning the Scandinavian runic writing (292-96).

[30] L'étude diachronique des phénomènes phonologiques et extra-phonologiques (297-318).

[31] Bemerkungen zum deutschen Vokalsystem (319-26).

[32] Ein phonologischer Beitrag zur Entwicklung der slavischen Palatalreihen (327-34).

[33] Zum unbeendeten Artikel Trubetzkoys 'Aus meiner phonologischen Kartothek' (343-45).

volume will be cited to show the increasing influence of the highly patterned arrangement of sound systems characteristic of the Prague circle.

One of Trubetzkoy's papers attempts to demonstrate that enough information is available to construct a phonemic system for an artificial universal language which will offer no insuperable difficulties for the native speakers of any natural language. Difficulty is equated with learning distinctions not made in one's native language. Thus, the nine tones of Cantonese would be difficult for a German speaker to learn and should therefore be avoided. The universal language would overtax neither Europeans nor speakers of Chinese, Malay, or Sudanese languages if the following phonemes, in restricted sequences, were adopted: $u, o, a, e, i, p, t, k, n, m, s, w, y, l$. If the native speaker's language included, for example, voiced and voiceless stops, he would be told to use his voiceless series for the p, t, k of the universal language. This language should never impose a sound or series of sound lacking in a native language. The phonemic system of the universal language is, in effect, a common denominator of phonemic systems of natural languages throughout the world.

Trubetzkoy grants that at some points this does not hold. Thus, he cites languages which lack labials, and is uncertain whether the distinction between u and o should obtain in the universal language. Additional cautions on isolated points might be added by any student of unwritten languages.

There is another difficulty not touched upon. Hidatsa speakers, for example, could produce w and m of the universal language, but would confuse these sounds positionally: m would be made only in word-initial, w only between vowels; so also, n and the proposed liquid would be confused, and the latter and w would be confused with t and p in word-final.[34] Of all the consonants in Trubetzkoy's universal language, only k and s would serve without ambiguity for Hidatsa speakers.

In a world of innumerable spoken languages (and many written languages), of which relatively few have been described, generalizations such as Trubetzkoy's have value chiefly in pointing to the need for further information.

Two-thirds of the papers in the Trubetzkoy volume contribute to this need. They are all more or less phonemic in nature. Those which

[34] Robert H. Lowie, Hidatsa Texts with Grammatical Notes and Phonograph Transcriptions by Zellig Harris and C. F. Voegelin (Indiana Historical Society, Prehistory Research Series 1.6); Indianapolis, 1939.

isolate some aspect of a sound system for special treatment, and those which are more comparative than synchronic in treatment tend to be the least phonemic. An example is Isačenko's discussion of stress and tone in Balto-Slavic, which includes, besides the linguistic argument, a consideration of mechanically measurable reality versus 'subjective' reality, a quotation from Alexis Carrel ('Chez l'homme ce qui ne se mesure pas est plus important que ce qui ce mesure'), and a reference to the methods of G. K. Zipf.

The fact that phonemic formulations can be profitably used in historical problems is well illustrated in Trnka's paper.

Trnka's problem: to account for the one-third reduction in the number of letters in runic writing during two centuries before the viking period. The loss of letters has been ascribed by von Friesen to degeneration resulting from cultural isolation. Trnka points out that the reduction of letters went on while the number of phonemes increased, and that this reduction is contrary to the general tendency of 'scribal tradition of any linguistic community'.

The last point may be questioned. Any shift from syllabic to alphabetic writing would, by definition, reduce the number of letters used. Or in the complexities of non-syllabic Egyptian, uni-consonantic words could represent all consonants and would then be tantamount to an alphabet, albeit an alphabet not recognized as such by Egyptians. But the makers of the first alphabetic writing, knowing, as Harris says, 'clearly or dimly, of the existence of Egyptian signs for single consonants, attempted to construct for their language a similar apparatus of simple signs.'[35] Kroeber also distinguishes between (a) the total Egyptian system, (b) the small potentially alphabetic fraction of this, (c) the conceptual borrowing (stimulus diffusion) of the latter by non-Egyptians.[36]

Trnka's solution: the decisive cause for the reduction of letters in runic writing is found in phonemic changes. The orthography represented the earlier phonemic system 'admirably'. By the end of the 8th century a new phonemic system had developed which distinguished between voiced and voiceless stops (not distinguished phonemically in the earlier system); but the formerly distinguished voiced and voiceless spirants fell together as one phonemic series. In accommodation to the new system the orthography no longer marked differences between

[35] Zellig S. Harris, A Grammar of the Phoenician Language (American Oriental Society, American Oriental Series 8.14); New Haven, 1936.

[36] A. L. Kroeber, Stimulus Diffusion, American Anthropologist 42.6.

voiced and voiceless spirants, since these were no longer distinguished phonemically, but failed to mark the new phonemic distinction between voiced and voiceless stops. Hence the letters used for the few system were fewer and also less adequate than those used for the older phonemic system.

However, can one say that the phonemic changes alone were responsible for the reduction in letters? The orthography showed a tendency to underwrite its phonemes even for the admirable old system. As Trnka points out, vocalic and consonantic quantities were never marked, and the phonemic sequence *ng* was once represented by a single letter.

Of great methodological interest in a different way are two papers which take published phonetic descriptions of languages and convert the given phonetic data into phonemic systems. Trubetzkoy's paper begins with the phonetic description of the Dunganic dialect of Chinese supplied by Polivanov and Jan-Šan-Sin; Trager's paper begins with the phonetic description of Castillian Spanish supplied by Navarro-Tomás. Trubetzkoy's treatment of Dunganic vowels is exceedingly elaborate; noteworthy also is his consideration of alternate possibilities. Trager's work serves partly to summarize phonetic data, but also to establish Castillian prosodemes and to show the effect of stress in clusters of two and three vowels. The utmost brevity is attained in both papers without any suggestion of suppressing contrary data.

Both Trubetzkoy and Trager are restricted in formulation, since their phonetic data were supplied by others; one of the special merits of the phonemic method (when not so restricted) is that in its preliminary lists of positional variants, for example, it draws attention to phonetic detail which might well go unobserved in a purely impressionistic record. For a thoroughly unrestricted description of a sound system, we have Bloomfield's paper on Menomini.

Menomini morphophonemics is a construct applying on the whole to a level above phonetics and phonemics. But without rigorous isolation of an intermediate level, the morphophoneme *ə* is set up partly on the basis of brute phonetics.

For morphology, zero suffixes are found throughout. But zero roots are also postulated: some words may then be analyzed as consisting of suffixes without explicit roots (many words are analyzed as prefix plus suffix without root). That is, in order to justify an actual suffix in word initial, a preceding zero root is set up.

Not all changes in morphological elements in different words are

treated as essential to the morphophonemic problem. Besides zero and actual element, pairs of forms as *-kamy-* and *-ākamy-*, with the meaning identical for both ('water'), are reserved for consideration as morpholexical variations. Each morpholexical variation is written separately in the morphophonemic formula. Some changes of words in a phrase as well as members in a compound in different combinations (external or syntactic sandhi) are also reserved for separate consideration.

The morphophonemic problem, as treated, is concerned therefore with the remaining changes in morphological elements of simple words and members of compounds (internal sandhi). Most of the changes treated are involved in suffixation.

The treatment is surprisingly simple. Two orthographic systems and a set of rules are given: a morphophonemic system for writing basic forms, a phonemic system for writing actual forms, and a set of rules for deriving the actual forms from the theoretical forms. The latter are therefore descriptive, not historical, but nevertheless show general resemblances to earlier forms of the language, and to historical developments from the parent language to present day Menomini.

With a few exceptions, the two systems of orthography employ the same symbols. The morphophonemic system includes *ə* and *N* and certain clusters lacking in the phonemic system; the phonemic system includes *i*, *ī*, (*ū*) lacking in the morphophonemic system.

The morphophonemic orthography will lead to a single possible phonemic form in some sequences. Thus, basic *ne* is always actualized as *se*, basic *Ne* as *ne*. It would not be possible to set up two dental stops *t* and *T*, parallel to *n* and *N*, because every *t* before certain vowels is replaced in alternation by *s*. Rather, it would be necessary here to set up morphophonemic characters for the vowels to show which of them call for a preceding *t* and which call for a preceding *s*.

Bloomfield does not do this: he consistently avoids comprehensive elaboration, (1) by postulating a minimum number of special morphophonemic symbols;[37] (2) by distinguishing from internal sandhi, as a fraction of all changes, morpholexical variations as well as changes in external sandhi which cannot be derived from a single morphophonemic

[37] Even where the symbols are the same, two distinct systems are of course maintained. Thus, the vocalic quantity of a given phonemic form is derived from the morphophonemic form by such rules as basic single syllable *v* yields actual *v̄*, basic *v-v* yields actual *v-v̄*, and so on (with *v* for short vowel, *v̄* for long vowel). But short and long vowels occur in both the basic and the actual systems.

formula; and (3) by stating rules for internal sandhi to apply to productive changes, with irregular changes listed after many rules.

What advantage is gained by postulating as many morphophonemic symbols as are necessary in order to be able to derive all changes of forms (in which meaning remains the same) from a single formula, and to state all rules, however elaborately, so that no irregular instances remain? Some attempts to show phonological alternation by special orthography have been far more complex than Bloomfield's. Thus, the Nootka study uses well over a score of special symbols;[38] the Tübatulabal study leans definitely toward comprehensive elaboration;[39] and Hockett treats both the external and the internal sandhi of Potawatomi in his chapter on morphophonemics, providing eight special morphophonemes primarily for internal sandhi.[40] Bloomfield's Menomini may be distinguished from the Nootka, Tübatulabal, and Potawatomi studies in that it alone is good to the reader: it gives him few theoretical forms and only simple rules to remember.

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LINGUISTIC ATLAS OF NEW ENGLAND. Vol. I (in two parts): Maps 1–242. By HANS KURATH, with the collaboration of MILES L. HANLEY, BERNARD BLOCH, MARCUS L. HANSEN, GUY S. LOWMAN JR. Providence: Brown University, 1939.

HANDBOOK OF THE LINGUISTIC GEOGRAPHY OF NEW ENGLAND. By HANS KURATH, with the collaboration of MARCUS L. HANSEN, JULIA BLOCH, BERNARD BLOCH. Pp. xii + 240. Providence: Brown University, 1939.

It is becoming rather a commonplace to say that one of the outstanding advances in linguistic science during the course of the twentieth century has been made in the technique of linguistic geography. Yet this must be repeated here in order to place an appraisal of the first of the three volumes of the Linguistic Atlas of New England and its accompanying handbook in the proper setting. For the present work continues the progress in methodology apparent in the dozen linguistic atlases which have appeared in the last two decades.

Since the general plan for a Linguistic Atlas of the United States and

[38] Edward Sapir and Morris Swadesh, Nootka Texts 236–39 (Linguistic Society of America, Philadelphia, 1939).

[39] Morris Swadesh and C. F. Voegelin, A Problem in Phonological Alternation, LANG. 15.1–10.

[40] Charles Hockett, The Potawatomi Language (Yale Dissertation, 1939).

Canada (of which the present work is but the first unit) grew out of a conference of fifty eminent American linguistic scholars, and since the present work is the product of the close cooperation of a distinguished committee and a carefully trained corps of investigators, it is scarcely within the province of any individual reviewer to deal out praise or blame with a lavish hand. It is interpretative rather than judicial criticism which is apropos here.

The first thing to be considered is the size and nature of the task at hand. The area of the New England states is roughly one-half that of Italy, and somewhat less than one-third that of Germany or France; thus geographically, Kurath and his associates had the advantage of working in a territory more compact than that covered by Wenker in Germany, Gilliéron in France, or Jaberg and Jud in Italy. When the social and cultural history of this territory is brought to mind, however, the magnitude of the task confronting the New England investigators becomes immediately apparent. Almost every other dialect atlas has been made in a country where the folk speech is sharply differentiated from the cultivated or literary standard. In America, because of the spread of education, ease of communication and mobility of the population, and indistinctness of social stratification, lines of cleavage between the folk speech and the cultivated standard are often blurred. Dialect investigation in such a milieu requires a deftness of manipulation and a delicacy of touch which would be quite superfluous in many of the older European countries.

In general, it is fair to say that the New England atlas is a refinement of the French technique of dialect study as illustrated by the work of Gilliéron, in opposition to the German method as illustrated by the work of Wenker. That is to say, it uses an extensive questionnaire, it depends upon an intensive interview with one or more informants who, in the judgment of the investigators, are representative of each community investigated—even the communities have been selected as representative of somewhat larger speech areas—and lastly, the records are made in a finely differentiated phonic notation.

The New England atlas may be said to represent the following advances in this technique, even over the work of Jaberg and Jud, which is in the Gilliéron tradition: First, a careful attempt to secure informants of comparable age-levels is more apparent here than in any other atlas which has yet appeared. Even though Jaberg and Jud felt it desirable to record primarily middle-aged informants, they were not averse to accepting youngsters of seventeen and oldsters of eighty-four. Because

of the rapid social and cultural shifts mentioned previously, the New England investigators could not afford to be so casual. The second important advance in technique lies in the selection of two informants from each community—one representative of the older and relatively unschooled generation; the second, from the middle-aged group with better formal education. The importance of this double record cannot be over-estimated, since it makes possible a chronological or vertical as well as a regional or horizontal interpretation of the phenomena under consideration, which will increase many times the usefulness of the Atlas findings to the historian of American English. The subsequent work of Bloch on postvocalic *r* and that of Penzl on the 'compromise vowel' [a] offer striking testimony to the significance of these innovations in method. Moreover, this is the first atlas to include a systematic sampling of cultivated speech. The records of well-educated speakers in thirty-eight communities constitute a fuller and more detailed account of the standard language of the region than is available in any other publication, and will be of great value even to those who are not especially interested in the peculiarities of local dialects.

Finally, the comparative ranking of the several investigators in respect to the various aspects of field technique on p. 52, and the diagrams on p. 126 of the Handbook showing their divergences in practice in the recording of low back vowels, give the user of the Atlas a unique opportunity to see through the field worker to the essential facts of the language.

The slightly modified form of the IPA alphabet which was adopted as a system of recording in the New England atlas is without question an improvement over those to be found in similar works. It should be understood that for a purpose such as this, some modification is inevitable. No one can expect the alphabet of the IPA to serve without modification as the instrument for a careful impressionistic recording of any particular language or dialect. As a matter of fact, it seems to me a mistake to consider the IPA in any light except that of a generalized medium from which deviations may be made to fit whatever specific situations may arise. The history of linguistic scholarship offers ample evidence that to demand the creation of a universal alphabet is to place too great a strain on human ingenuity; an undeviating and uncritical acceptance of the IPA alphabet in every linguistic study henceforth would be exalting the system at the expense of the science.

The clear, systematized discussion of these symbols and the sounds they represent, which is contained in the Handbook (Chap. IV), is

wholly praiseworthy. That the arrow-head type of direction mark, in place of the cumbersome device of the IPA, is an improvement worth permanent retention, certainly no one will deny. The weakest spot in the phonetic alphabet used in this work was the lack of distinctive symbols for the round and unround varieties of the low back vowel. That this weakness has been ingeniously circumvented, in part at least, by the diagrammatic analysis of the field workers' practice, has already been pointed out. That it will be avoided in future dialect studies to be made in this country is assured by the adoption of a special symbol for the low back unround vowel and a diacritic for unrounding. In using an alphabet so narrow as this there is admittedly a potential danger of over-transcription; yet, if one were forced to choose, in a work of this nature, between the danger inherent from over-transcription and the defects or lacunae incident to the employment of a broad alphabet, there is obviously no question as to where the choice would lie.

The Handbook too contains a number of innovations to which attention should be called. In no comparable auxiliary is the history of the area under survey dealt with so comprehensively and with such clear emphasis upon economic factors and population movement. It is seldom that any handbook goes so far in interpreting to the lay reader the material of the atlas as does the first chapter, The Dialect Areas of New England. Too often the dialect geographer is content to let the material he has compiled speak for itself. The detailed histories of the communities and the vitae of the informants (Chap. VI) give the reader no small clue to a sympathetic understanding of the whole New England region. And here it should also be mentioned that the inclusion not merely of the present population figures of the communities but of their population figures at earlier dates is a practice which can well be imitated in dialect atlases to come. Noteworthy also is the completeness of the genealogies of the informants, even unto the third and fourth generations.

The maps are admirable for their presentation of the physical characteristics of the area upon which the specific chartings are superimposed. Although the editorial staff is somewhat apologetic about the draftsmanship of the earlier maps, when one compares them with other dialect atlases he is convinced that this diffidence is superfluous. The simplification of symbolic marks of punctuation and of abbreviations to indicate circumstances attendant upon the informant's reply to the investigator's question, is a welcome improvement over the French and Italian atlases. The additional explanatory information presented along with the chartings proper is exceedingly helpful, and

the repeated listing on every map of the communities investigated by each field worker is to be particularly commended.

There is not space here to enter into a detailed discussion of the findings of the New England atlas as they are portrayed on the more than two hundred maps which have appeared so far, but some mention must be made of the significance of this material. Although this is definitely a Sprachatlas rather than a Sachatlas, nevertheless many of the individual maps are of great importance to the student of American culture and folkways. To select a few random illustrations, Map 109, which deals with the relative distribution of the terms *loft* and *scaffold*, contains in the explanatory comments a veritable mine of information concerning rural architecture. Map 131, charting the occurrences of *pot* versus *kettle*, throws light not merely upon early American utensils but upon the whole field of cookery as well. The animal calls which occupy a whole section of the first volume are obviously language items which depend for their continued existence entirely upon oral transmission from one generation to the next and as such cannot be overlooked by the student of folk culture. Even the psychologist will find grist for his mill in such maps as 210, *castrate*, and those dealing with the names for various male animals. Here is material for a whole treatise on euphemisms and taboos.

I shall allow only a few carping criticisms to mar the general tone of this review. Since the Handbook will presumably reach a fairly large number of readers who have not the Atlas immediately available, I believe that at least one map in the Handbook should have indicated the precise location of the communities investigated in central and northern Maine and in New Brunswick. Moreover, at least one map in the Handbook should have set forth the physical contours of the whole New England territory. In view of the double purpose of the Handbook, the organization of the chapters was necessarily difficult and any suggested scheme would undoubtedly be open to some criticism. Yet I find the separation of Chapter II on methodology from Chapters IV, V, and VI a barrier to continuity of impression. Finally I have not yet been able to construct for myself a satisfactory rationale of the numbering system applied to the communities which were investigated.

But these are minor matters. The extraordinary thing is that there are so few of them to comment on. The most fitting tribute which can be paid to the work of Professor Kurath and his associates is to express one's eagerness to see the forthcoming volumes of this excellent work.

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UNIVERSITY OF MICHIGAN

NOTES

THE LINGUISTIC SOCIETY OF AMERICA was incorporated on May 6, 1940, in Washington, D. C., as a non-profit corporation of the District of Columbia, by Roland G. Kent, Edward H. Sehrt, and Mortimer Graves, acting under the vote of the Society on December 27, 1939 (see Bulletin 13.17) and the authorization of the Executive Committee. The incorporators elected the present Executive Committee to be the trustees of the corporation during its first year; the Committee has accepted the election and has taken over the assets and liabilities of the unincorporated Society.

THE COMMITTEE IN CHARGE OF RAISING FUNDS for the endowment of the Linguistic Institute (Franklin Edgerton chairman, see Bulletin 13.21) on May 29 reported the following receipts: cash payments, $135 from 19 persons; pledges, $882 from 14 persons. Most of these 33 contributors are members of the Linguistic Society, but several are non-members who have attended the Institute. It is evident that relatively few members of the Society have so far responded to the call issued by the Committee on April 15; but the Committee is confident that many devoted friends of the Institute who have not yet responded will do so in the near future.

The American Council of Learned Societies, in cooperation with our Committee, has on foot definite plans for an approach to one of the Foundations. The chances of success in this endeavor will be greatly increased if all who can do so will send in contributions or pledges.

THE EXECUTIVE COMMITTEE has elected George Herzog to be the Society's representative on the Council of the American Association for the Advancement of Science, succeeding the late Edward Sapir.

AT THE EIGHTH AMERICAN SCIENTIFIC CONGRESS, which met in Washington on May 10–18, 1940, the Society was represented by Charles C. Fries, Allan H. Fry, George Herzog, and Edward H. Sehrt, who had been named as delegates by the President of the Society.

CYRUS ADLER, a member of the Linguistic Society of America since 1929, died on April 7, 1940, in Philadelphia.

He was born in Van Buren, Ark., on September 13, 1863. He received the A.B. and the A.M. degrees from the University of Pennsylvania in 1883 and 1886, and the Ph.D. from the Johns Hopkins University in 1887. He became President of the Dropsie College for Hebrew and Cognate Learning (Philadelphia) in 1908 and of the Jewish Theological Seminary of New York City in 1924, holding both these offices until his death. He was a member of many societies and academies (President of the American Oriental Society in 1923), and an active worker for the interests of the Jewish people in all countries. A selection of his papers, together with a bibliography listing his voluminous writings, was reprinted by his friends in a volume issued in his honor on the occasion of his seventy-fifth birthday.

JOHN M. MANLY, a Signer of the Call that led to the foundation of the Linguistic Society of America, and a member of the Society until the end of 1936, died in Tucson, Ariz., on April 2, 1940.

He was born in Sumter Co., Ala., on September 2, 1865. He received the M.A. and the Ph.D. degrees from Harvard University in 1889 and 1890. After several years at Brown University, he went in 1898 to the University of Chicago, where he was Professor of English until his retirement. On leave of absence 1917–19, he was in the Military Intelligence Division of the United States Army. He was a member of many societies and academies in this country and abroad, and in 1920 was President of the Modern Language Association of America. His special field was early English literature, though he wrote numerous volumes on the later periods also. From 1926 on he was at work on a critical edition of Chaucer's Canterbury Tales.

HENRIETTA PRENTISS, a Foundation Member of the Linguistic Society of America, and a member of the Society until the end of 1938, died in New York on May 14, 1940, at the age of sixty-four.

After graduating from Smith College, she continued her studies at the University of Iowa. She taught at the Bloomsburg (Pa.) Normal School and at Adelphi College (Brooklyn), and in 1908 joined the Department of Biology in Hunter College; later she became Head of the Department of Speech at the same institution. She was one of the organizers, and the first president, of the National Association of Teachers of Speech.

THE FOLLOWING NEW MEMBERS FOR 1940 have been admitted into the Linguistic Society of America subsequent to the last published list and up to June 4, 1940:

BARTLETT, ADELINE C., Ph.D., Assistant Professor of English, Hunter College; 88 Morningside Drive, New York City.

BENDER, ERNEST, student at Temple University; 959 N. 6th St., Philadelphia, Pa.

BLOK, HENRY P., Ph.D., Assistant Professor of Egyptology, University of Utrecht; Willem de Zwygerlaan 18, Oostgeest, Netherlands.

COOKE, PAUL J., Ph.D., Assistant Professor of English, Mundelein College, Sheridan Road at the Lake, Chicago, Ill.

FRIEDMAN, CLARENCE W., Catholic University of America, Washington, D.C.; *Germanics.*

HARRINGTON, JOHN P., Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.

LANDA, SAMUEL, M.A., Teacher of French in the New York High Schools; 281 E. Broadway, New York City; *Romance syntax.*

LANG, EDGAR ANTHONY, Ph.D., Curley Hall, Catholic University of America, Washington, D.C.; *German.*

LEICHTY, V. E., M.A., Instructor in English, Michigan State College, East Lansing, Mich.; *Modern English usage.*

MERKEL, GOTTFRIED F., Ph.D., Eastford, Conn.; *Germanic languages.*

SORG, HENRY CHARLES, Ph.D., Instructor in German Language and Literature, Jordan College, Menominee, Mich.

PUBLICATIONS RECEIVED

We acknowledge here the receipt of such works (books, monographs, bulletins, reprints of articles, issues of periodicals, etc.) as appear to bear on the scientific study of language. The publicity thus given is regarded as a full return for the presentation of the work. For further bibliographical information consult the annual list of Exchanges.

In no case is it possible to comply with the request of certain publishers for the return of books not reviewed. Reviews will be printed as circumstances permit, and copies will be sent to the publishers of the work in question.

Members of the Linguistic Society who wish to review any of the books here listed are invited to communicate with the Editor. Books reviewed become the property of the reviewer.

ACTA JUTLANDICA 1-6 (1929-34). (Aarsskrift for Universitetsundervisningen i Jylland 1929-33; Aarsskrift for Aarhus Universitet 1934.) Universitetsforlaget i Aarhus.

ACTA PHILOLOGICA SCANDINAVICA 13.261-376 (1939).

AMERICAN SPEECH 14.243-348 (1939), 15.1-222 (1940).

ANSEŸS DE MES ACCORDING TO Ms. N. Edited by HERMAN J. GREEN. Pp. 458. Paris, 1939.

L'ANTIQUITÉ CLASSIQUE 8.1-508 (1939).

ARCHIVIO DI PSICOLOGIA, NEUROLOGIA, PSICHIATRIA E PSICOTERAPIA 1.1-372 (1939). Milano: Pubblicato sotto gli Auspici del Consiglio Nazionale delle Ricerche.

ARKIV FÖR NORDISK FILOLOGI 55.197-296 (1939).

BIBLICA 21.1-240, i*-x*, 1*-50* (1940). Commentarii Editi Cura Pontificii Instituti Biblici. Roma.

BOLETIN BIBLIOGRAFICO MEXICANO, reseña mensual de libros y folletos editados en Mexico: Octubre 1939. Pp. 24. Mexico: Instituto Panamericano de Bibliografia y Documentacion.

BOLLETTINO DELLE PUBBLICAZIONI ITALIANE, Nos. 460-3 (1939-40).

BULLETIN DE L'INSTITUT MARR DE LANGUES, D'HISTOIRE ET DE CULTURE MATÉRIELLE 3.1-386 (1938). Tbilissi: Édition de la Filiale Géorgienne de l'Académie des Sciences de l'URSS.

BULLETIN DES SOMMAIRES ET COMPTES RENDUES BIBLIOGRAPHIQUES DES PÉRIODIQUES FRANÇAIS ET ÉTRANGERS, Nos. 111-22 (1939).

BULLETIN DU CERCLE LINGUISTIQUE DE COPENHAGUE 4.1-18 (1937-8). Copenhague: Einar Munksgaard, 1939.

BULLETIN LINGUISTIQUE 7.1–196 (1939). Faculté des Lettres de Bucarest; Institut de Linguistique Roumaine.

BULLETIN OF THE DECCAN COLLEGE RESEARCH INSTITUTE 1.1–444 (1940). Poona, India.

BULLETIN OF THE SCHOOL OF ORIENTAL STUDIES 10.277–558 (1940). University of London.

THE BURUSHASKI LANGUAGE. Vol. 1: Introduction and grammar; Vol. 2: Texts and translations; Vol. 3: Vocabularies and index. By Lt. Col. D. L. R. LORIMER. (Instituttet for Sammenlignende Kulturforskning, Serie B, 29.) Oslo: H. Aschehoug, 1935–8.

CATHOLIC UNIVERSITY OF AMERICA PATRISTIC STUDIES 58: Sancti Ambrosii liber de consolatione Valentiniani: a text with translation, introduction and commentary, by THOMAS A. KELLY; pp. xxii + 324; 1940.—59: The Style of Pope St. Leo the Great, by WILLIAM J. HALLIWELL; pp. xvi + 98; 1939.—60: The Style of the letters of St. Jerome, by JOHN NICHOLAS HRITZU; pp. xii + 122; 1939. (Catholic University Dissertations.) Washington: Catholic University Press.

CATHOLIC UNIVERSITY OF AMERICA STUDIES IN MEDIEVAL AND RENAISSANCE LATIN LANGUAGE AND LITERATURE 12: Aeneae Silvii de liberorum educatione: a translation with an introduction, by Brother JOEL STANISLAUS NELSON; pp. xii + 232; 1940. (Catholic University Diss.) Washington: Catholic University Press.

THE CELTIC DIGEST 1.11–6 (1938).

CLASSICAL WEEKLY 33.122–56, 193–204 (1940).

CONFÉRENCES DE L'INSTITUT DE LINGUISTIQUE DE L'UNIVERSITÉ DE PARIS 6 (1938). Paris: Boivin, [1939].

THE CONNECTIONS OF THE GESTE DES LOHERAINS WITH OTHER FRENCH EPICS AND MEDIAEVAL GENRES. By RUSSELL KEITH BOWMAN. Pp. xvi + 168. New York, 1940.

DEVELOPMENT OF THE CANAANITE DIALECTS. By ZELLIG S. HARRIS. (American Oriental Series 16.) Pp. x + 108, with folding chart. New Haven: American Oriental Society, 1939.

DOKUMENTE ZUR INTERPUNKTION EUROPÄISCHER SPRACHEN. By C. A. BODELSEN, A. JOLIVET, HJALMAR LINDROTH, and EBERHARD ZWIRNER. Pp. xliv + 57. Göteborg: Elanders Boktryckeri, 1939.

EDUARD HERMANN 70 JAHRE, 19. Dezember 1939. Pp. 18. [Greeting and bibliography.]

THE EFFECT OF STRESS UPON QUANTITY IN DISSYLLABLES: an experimental and historical study. By NORMAN E. ELIASON and ROLAND C. DAVIS. (Indiana University Publications, Science Series 8.) Pp. 56. Bloomington, 1939.

E. F. SPRECHPLATTE No. 10 [phonograph record with mimeographed text]: Althochdeutsch. A: Das Hildebrandslied; B: Merseburger Zaubersprüche, Wessobrunner Gebet, Aus Muspilli, Aus Otfrid. Spoken by Erich Funke; recorded by Milton Cowan. State University of Iowa.

EINFÜHRUNG INS GRIECHISCHE, FÜR UNIVERSITÄTSKURSE UND ZUM SELBSTSTUDIUM ERWACHSENER. By FRIEDRICH SLOTTY. 2d ed. Pp. viii + 274 + 118 (Wörterbuch). Berlin: Walter de Gruyter, 1938.

ELEMENTE DE SINTAXĂ GREACĂ PENTRU CLASA VIII-A SECUNDARĂ. By TH. SIMENSCHY. Pp. 43. Iași: Institutul de Arte Grafice 'Alexandru A. Terek', 1939.

ENGLISCHE STUDIEN 73.321–440 (1939).

THE ENGLISH HUNDRED-NAMES: THE SOUTH-EASTERN COUNTIES. By O. S. ANDERSON. (Lunds Universitets Årsskrift, N. F. Avd. 1, 37.1.) Pp. xvi + 242. Lund: C. W. K. Gleerup, 1939.

THE ENGLISH HUNDRED-NAMES: THE SOUTH-WESTERN COUNTIES. By O. S. ANDERSON. (Lunds Universitets Årsskrift, N. F. Avd. 1, 35.5.) Pp. xx + 236. Lund: C. W. K. Gleerup, 1939.

ENGLISH STUDIES 21.241–88 (1939), 22.1–96 (1940).

ESSAI SUR LES FONDEMENTS PSYCHOLOGIQUES ET LINGUISTIQUES DE LA MÉTAPHORE AFFECTIVE. By HANS ADANK. Pp. 192. Genève: Éditions Union, [1939].

EVERYDAY ARABIC. By H. M. NAHMAD and C. RABIN, with a preface by H. A. R. GIBB. Pp. xii + 100, with 8 photographs. London: J. M. Dent, 1940.

EL FOLK-LORE DE YUCATAN. By DANIEL GARRISON BRINTON. (Ediciones del Museo Arqueologico e Historico de Yucatan 3.) Pp. 40. Mérida, Mexico: Imprenta Oriente, 1937.

FOUNDATIONS OF LANGUAGE. By LOUIS H. GRAY. Pp. xvi + 530. New York: Macmillan, 1939.

FOUNDATIONS OF LOGIC AND MATHEMATICS. By RUDOLF CARNAP. (International Encyclopedia of Unified Science 1.3.) Pp. viii + 72. University of Chicago Press, 1939.

HARVARD JOURNAL OF ASIATIC STUDIES 4.213–432 (1939), 5.1–100 (1940).

HESPÉRIS 26.113–90 (1939).

A HISTORY OF PALATOGRAPHY TECHNIQUES. By ELBERT R. MOSES JR. Pp. 12. Columbus: Ohio State University, 1940.

AN INITIAL SERIES FROM TRES ZAPOTES, VERA CRUZ, MEXICO. By M. W. STIRLING. (National Geographic Society Contributed Technical

Papers, Mexican Archeology Series 1.1.) Pp. 15. Washington, 1940.

INTERNATIONAL AUXILIARY LANGUAGE ASSOCIATION. Annual report for 1939. Pp. 20.

INTERPRETATIONS OF A NEW METHOD IN PALATOGRAPHY. By ELBERT R. MOSES JR. Pp. 14. Ann Arbor, Mich.: Edwards Brothers, 1940.

AN INTRODUCTION TO THE STUDY OF ENGLISH SOUNDS. By E. KRUISINGA. 7th ed. Pp. 218. Groningen-Batavia: P. Noordhoff N. V., 1940.

INTRODUZIONE ALLO STUDIO DELLE LINGUE GERMANICHE. By VITTORE PISANI. (Manuali Linguistici del R. Istituto Superiore Orientale di Napoli 2.) Pp. 112. Roma: Edizioni Universitarie, 1940.

ITALICA 17.1–32 (1940). The Quarterly Bulletin of the American Association of Teachers of Italian. Menasha, Wis.

THE JEWISH QUARTERLY REVIEW, N. S. 30.221–416 (1940).

THE JOURNAL OF THE POLYNESIAN SOCIETY 48.167–224 (1939); with supplement: The Oldman collection of Polynesian artifacts 47–50, plates 69–82. New Plymouth, N. Z.

JOURNAL OF THE ROYAL ASIATIC SOCIETY OF BENGAL 4.1–478 (1938). Calcutta, 1939.

THE KALISPEL LANGUAGE: an outline of the grammar with texts, translations, and dictionary. By HANS VOGT. (Det Norske Videnskaps-Akademi i Oslo.) Pp. 178. Oslo: Jacob Dybwad, 1940.

LANGUAGE AND SPEECH HYGIENE, AN APPLICATION OF GENERAL SEMANTICS: outline of a course. By WENDELL JOHNSON. (General Semantics Monographs 1.) Pp. vi + 54. Chicago: Institute of General Semantics, 1939.

LEUVENSCHE BIJDRAGEN 31.101–32 (1939). Tijdschrift voor Moderne Philologie. 's Gravenhage.

LEVENDE TALEN, Nos. 107–9 (1939–40).

LINGUA NOSTRA 2.1–48 (1940).

MAISTRE NICOLE ORESME: LE LIVRE DE ETHIQUES D'ARISTOTE. Edited by ALBERT DOUGLAS MENUT. Pp. xii + 548, with 20 plates. New York: G. E. Stechert, 1940.

LE MAÎTRE PHONÉTIQUE, Nos. 68–9 (1939–40).

MAN 39.184–201 (1939), 40.1–104 (1940).

THE MEANING OF VEDIC bhūṣati. By J. GONDA. Pp. 28. Wageningen: H. Veenman, 1939.

MEDEDEELINGEN VAN DE ZUIDNEDERLANDSCHE DIALECTCENTRALE 1939.129–88.

MEIJERBERGS ARKIV FÖR SVENSK ORDFORSKNING 2.1–148 (1939).
Göteborg: Wettergren & Kerbers Förlag.

MÉLANGES DE LA FACULTÉ ORIENTALE, continués par les MÉLANGES DE
L'UNIVERSITÉ SAINT JOSEPH, vol. 20 (1936). Tables générales des 21
premiers volumes (1906–35). Pp. viii + 192. Beyrouth: Imprimerie
Catholique, 1939.

MEMORIA DE LA PRIMERA ASAMBLEA DE FILOLOGOS Y LINGÜISTAS.
Publicada por el Departamento Autónomo de Asuntos Indígenas.
Pp. xiv + 104. México: E. Murguia, 1940.

MODERN LANGUAGE QUARTERLY 1.1–126 (1940). Seattle: University
of Washington Press.

LE MUSÉON 52.199–422 (1939).

NAMN OCH BYGD 27.1–64 (1939).

NAREČJE VASI SELE NA ROŽU. By A. V. ISAČENKO. (Razprave
Znanstvenega Društva v Ljubljani 16, Filološko-Lingvistični Odsek
4.) Pp. 150. Ljubljana: Natisnila Učiteljska Tiskarna, 1939.

NEOPHILOLOGUS 25.81–240 (1940).

NEWS BULLETIN of the Institute of International Education, Nos. 7–8
(1940).

NOTAS ACERCA DE BIBLIOGRAFIA YUCATECA. By MIREYA PRIEGO DE
ARJONA. (Ediciones del Museo Arqueologico e Historico de Yuca-
tan 4.) Pp. 16. [Mérida], 1937.

NOUVELLES ÉTUDES D'ÉTHIOPIEN MÉRIDIONAL. By MARCEL COHEN.
(Bibliothèque de l'École des Hautes Études, Sciences Historiques et
Philologiques 275.) Pp. xxx + 472. Paris: H. Champion, 1939.

OLD ENGLISH PERSONAL NAMES IN BEDE'S HISTORY: an etymological-
phonological investigation. By HILMER STRÖM. (Lund Studies in
English 8.) [Lund University Diss.] Pp. xliv + 182. Lund: C.
W. K. Gleerup, 1939.

O NEJSTARŠÍM STĚHOVÁNÍ NÁRODŮ A O PROBLÉMU CIVILISACE PROTO-
INDICKÉ. By BEDŘICH HROZNÝ. Pp. 28, with 20 plates. Praha,
1939.

ONZE TAALTUIN 8.193–336 (1939–40).

ORDSPRÅKSSTUDIER. By ROLF PIPPING. (Studier i Nordisk Filologi
28.3.) Pp. 82. Helsingfors, 1938.

ORIENTAL LITERARY DIGEST 3, Nos. 2–7 (1939–40). Poona, India.

ORIS SLOVENSKEGA KNJIŽNEGA IZGOVORA. By FR. BEZLAJ. (Raz-
prave Znanstvenega Društva v Ljubljani 17, Filološko-Lingvistični
Odsek 5.) Pp. 126. Ljubljana, 1939.

AN OUTLINE OF THE HISTORY OF THE GREEK LANGUAGE, WITH PAR-

TICULAR EMPHASIS ON THE KOINE AND THE SUBSEQUENT PERIODS. By PROCOPE S. COSTAS. (The Eurasian Library of America, Origines Eurasiaticae 2.6.) Pp. 144. Chicago: Ukrainian Academy of Sciences of America, 1936.

PHILOLOGICAL QUARTERLY 19.1–96 (1940).

PHONETIC TRANSCRIPTIONS FROM 'AMERICAN SPEECH'. Edited by JANE DORSEY ZIMMERMAN. Revised ed. (American Speech Reprints and Monographs 1.) New York: Columbia University Press, 1939.

RÉPONSES AU QUESTIONNAIRE. Vᵐᵉ Congrès International des Linguistes. Pp. 104. Bruges: Imprimerie Sainte Catherine, [1939].

REPRINTS of articles and reviews by A. W. DEGROOT, B. EMSLEY, E. HERMANN (2), F. H. MAUTNER, A. MENARINI, K. MENGES, H. PENZL, V. PISANI (2), C. R. SANKARAN (7), N. J. SZENCZI, L. TESNIÈRE (2), A. B. VÁSQUEZ, G. P. ZIPF & F. M. ROGERS.

SAMMON ARVOITUS. By E. N. SETÄLÄ. (Isien Runous ja Usko 1.) Pp. 654. Helsingissä: Kustannusosakeyhtiö Otava, 1932.

SCIENCE AND SOCIETY 1.1–270 (1936–7).

THE SEMASIOLOGICAL DEVELOPMENT OF THE PRONOMINAL ADVERBS OF MOTION IN OLD HIGH GERMAN (an abridgment). By WALTER THEODORE EICKMANN. Pp. 18. New York University Diss., 1939.

SHAWNEE STEMS AND THE JACOB P. DUNN MIAMI DICTIONARY. Part IV: Stems in *l-*, *m-*, and *n-*. By C. F. VOEGELIN. With appendix by B. L. Whorf. (Indiana Historical Society, Prehistory Research Series 1.9.) Indianapolis, 1940.

SLAVIA 17.1–320 (1939).

SMITHSONIAN INSTITUTION: 56th annual report of the Bureau of American Ethnology, 1938–9. Pp. 10. Washington, 1940.

SMITHSONIAN MISCELLANEOUS COLLECTIONS 99.1: Sketches by Paul Kane in the Indian country, 1845–1848, by DAVID I. BUSHNELL JR.; pp. 25; 1940.—99.2: Geologic antiquity of the Lindenmeier Site in Colorado, by KIRK BRYAN and LOUIS L. RAY; pp. 76, with 6 plates; 1940.—99.3: Ritual ablation of front teeth in Siberia and America, by ALEŠ HRDLIČKA; pp. 32, with 5 plates; 1940.

SMITHSONIAN REPORT FOR 1938, 521–68 (= Smithsonian Institution Publications 3518: History and stratigraphy in the valley of Mexico, by GEORGE C. VAILLANT; 3519: The Folsom problem in American archeology, by FRANK H. H. ROBERTS JR.; 3520: The Roman Orient and the Far East, by C. G. SELIGMAN). Washington, 1939.

SONS DEPENDENTES DA FRICATIVA PALATAL ÁFONA, EM PORTUGUÊS. By ARMANDO DE LACERDA and FRANCIS MILLET ROGERS. Pp. 128. (Reprinted from Biblos 15.) Coimbra: Laboratório de Fonética Experimental da Faculdade de Letras da Universidade de Coimbra, 1939.

SPECULUM 15.1-254 (1940).

SPEECH DEVELOPMENT OF A BILINGUAL CHILD: a linguist's record. Vol. I: Vocabulary growth in the first two years. By WERNER F. LEOPOLD. (Northwestern University Studies in the Humanities 6.) Pp. xiv + 188. Evanston and Chicago: Northwestern University, 1939.

DIE SPRACHE DER BUDUMA IM ZENTRALEN SUDAN. By JOHANNES LUKAS. (Abhandlungen für die Kunde des Morgenlandes 24.2.) Pp. xvi + 148. Leipzig: Deutsche Morgenländische Gesellschaft, 1939.

SPRÅKVETENSKAPLIGA SÄLLSKAPETS I UPPSALA FÖRHANDLINGAR Jan. 1937-Dec. 1939. (Uppsala Universitets Årsskrift 1939.13.) Pp. viii + 76. Uppsala: A.-B. Lundequist; Leipzig: Otto Harrassowitz, 1939.

STORIA DELLE LINGUA DI ROMA. By GIACOMO DEVOTO. (Istituto di Studi Romani, Storia di Roma 23.) Pp. [x +] 430, with 15 plates. Bologna: Licinio Cappelli, 1940.

STUDIA NEOPHILOLOGICA 12.1-278 (1939-40).

STUDIES IN HURRIAN GRAMMAR. By E. A. SPEISER. (Publications of the American Oriental Society, Offprint Series 10.) Reprinted from JAOS 59.289-324. New Haven: American Oriental Society, 1939.

STUDIES ON ARGYLLSHIRE GAELIC. By NILS M. HOLMER. (Skrifter utgivna av K. Humanistika Vetenskaps-Samfundet i Uppsala 31.1.) Pp. 232 [+ 8]. Uppsala: Almqvist & Wiksell, 1938.

SYRIAN EXPEDITION. (Oriental Institute Bulletin 1.) [Pp. 16.] The Oriental Institute of the University of Chicago, 1937.

TAAL EN LEVEN 3.121-60 (1940).

THEORY OF VALUATION. By JOHN DEWEY. (International Encyclopedia of Unified Science 2.4.) Pp. viii + 68. University of Chicago Press, 1939.

TIJDSCHRIFT VOOR NEDERLANDSCHE TAAL- EN LETTERKUNDE 59.81-320 (1939-40).

URSACHEN DES LAUTWANDELS. By H. L. KOPPELMANN. Pp. 156. Leiden: A. W. Sijthoff, 1939.

VIBRANĪ TVORI. Vol. I: Mova ī mislennä. By M. Ä. MARR. Pp. 272. Kiïv: Akademiä Nauk Ukr. R. S. R., İnstitut Movoznavstva, 1938.

VRASTMUNT: EIN BEITRAG ZUR MITTELHOCHDEUTSCHEN WORTGE-SCHICHTE. By ERIK ROOTH. (Lunds Universitets Årsskrift, N. F. Avd. 1, 36.5.) Pp. 88, with 1 plate. Lund: C. W. K. Gleerup, 1939.

THE WAQFIYAH OF 'AḤMED PĀŠĀ. By MUHAMMED AHMED SIMSAR. Pp. x + 204, with 2 plates. Philadelphia: University of Pennsylvania Press, 1940.

YEAR-BOOK OF THE ROYAL ASIATIC SOCIETY OF BENGAL 3.1–196 (1937), 4.1–138 (1938). Calcutta, 1939.

ZEITSCHRIFT FÜR EINGEBORENEN-SPRACHEN 30.1–160 (1939–40).

THE GREEK κ-PERFECT AND INDO-EUROPEAN -k(o)-

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[The formative -ka of Gk. ἕστηκα 'I stand' and Toch. tākā 'I was' must contain the Indo-Hittite 1st sg. perfect ending -xa. The fact that early Greek κ-perfects are nearly all from 'heavy bases' shows that in these words -xa was preceded by a laryngeal; it turns out to have been either ' or ꞌ. The behavior of the Indo-European noun suffix -k(o)- indicates that it represents IH -ꞌx-, where the -ꞌ- is the collective suffix and -x- the suffix that in Hittite yields factitive verbs and verbal nouns.]

Treatments of the Greek perfect generally include the statement that the use of -κα- as tense-sign of the perfect is a purely Greek innovation; but such a statement cannot be more than a summary of current knowledge. If we can find another Indo-European language that preserves traces of a perfect suffix cognate with Gk. -κα-, the beginnings of this suffix must be ascribed to Primitive Indo-European.

I think that the Tocharian preterit includes several stems with a suffix -ka that can be equated with Gk. -κα-. One of these was called to my attention by Sapir, namely tākā 'I was', which is shown by the imperative pästāk to have lost an initial sibilant. Sapir considered tākā cognate with Gk. ἕστᾱκα 'I stand'; whether the Primitive Indo-European form had reduplication, like the Greek, or lacked it, like the Tocharian, is a question that need not be raised. The semantic parallel presented by Spanish estar will occur to all.

Other Tocharian preterits that seem to contain the same suffix are kälkāṣt 'you went', kälk 'he went' : Skt. carati 'he moves, goes', Gk. πέλω, πέλομαι 'versor', Lat. colō 'plow, etc.'; kāk 'he called' : Skt. gāti 'he sings'; pälke (pret. midd.) 'he saw' : IE bhel- 'shine'.[1] More doubtful is the verb wāk, for which only preterit, conjunctive, and certain derivative forms are citable, and which Schulze, Sieg, and Siegling (Tocharische Grammatik 468) define as 'etwa "bersten", Kaus. "spalten, unterscheiden" '; with this one may compare IE wā-, wō-, wə- 'strike, wound' (Walde-Pokorny 1.211 f.).

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[1] See Walde-Pokorny 2.175 f.

In view of these Tocharian preterits the correspondence of Gk. ἔθηκα with Lat. *fēcī* and Phrygian αδδακετ and of Gk. ἧκα with Lat. *iēcī* takes on new significance. The three Greek aorists ἔθηκα, ἧκα, and ἔδωκα, nearly all the Homeric perfects in -κα, Lat. *fēcī* and *iēcī*, and two or three of the Tocharian preterits in -*ka* are formed from roots ending in a long vowel and show the radical vowel in full grade or *o*-grade. Phrygian αδδακετ seems not to follow this pattern, but we know too little about this language to be certain that the second *a* does not represent IE *ō*. At any rate it seems clear that the IE suffix -*ka* was originally appended to the full grade or *o*-grade of roots ending in an IE long vowel; the Latin forms like *faciō*, *factus*, *iaciō*, and *iactus* are not matched by anything in the related languages, unless it be Phryg. αδδακετ; either they represent an analogical extension of the -*c*- of the perfect or they are to be accounted for in the way suggested below (p. 278). Toch. *kälk* 'he went' from IE *kwel*- and *pälke* 'he saw' from IE *bhel*- show an extension of the suffix to roots ending in a consonant, just as Attic Gk. ἔσταλκα, etc., show an extension of the suffix -*ka* as compared with Homeric ἔστηκα, etc.

It will be objected that I am confusing aorist and perfect, whereas these two categories were sharply distinct in Primitive Indo-European. The answer is that there is no evidence except in Greek for a sharp distinction in meaning between aorist and perfect. It is, of course, easy to find in the cognate languages traces of the typical Homeric Greek meaning of the perfect; there is no doubt that the IE perfect might express a condition or state due to a previous event. But elsewhere than in early Greek the perfect may also serve as a narrative tense, and there is no evidence against assuming this meaning for proethnic times.[2] Even in Homeric Greek we must certainly admit the existence of one perfect with constant preterit meaning, namely ἦα, ἔα (= Skt. *āsa*), ἦσθα (= Skt. *āsitha*), ἦεν (= Skt. *āsa*), etc. If it can besides be made probable that Homeric θῆκα, ἧκα, and δῶκα are original perfects, there will remain no evidence anywhere against ascribing a preterit use to the IE perfect alongside of the value of the state attained (de l'état acquis: Renou, op. cit. 7).

[2] For Vedic Sanskrit, see Renou, La valeur du parfait dans les hymnes védiques, passim, esp. 9, 20, 40-3. Renou, 8 f., summarizes the use of the perfect in Avestan. In Avestan and Sanskrit, as in Greek, the use of the perfect as a preterit increases with the lapse of time, and the deduction is probable that the perfect was once (I think in Pre-Indo-Hittite) purely a kind of present. Still the preterit use that attaches to many perfect forms in Sanskrit, Avestan, Latin, and Germanic may perfectly well have established itself in Primitive Indo-European or even earlier.

There is no lack of confusion of perfect and aorist forms in the early IE languages. In Sanskrit the perfect ending of the 3d pl. occurs in many aorists (e.g. *adur* 'they gave', *anaiṣur* 'they led'). Gk. ἤδεσθα 'you knew', ἤεισθα 'you went', ἔφησθα 'you said' show the same combination of aorist stem-suffix and perfect ending that appears in Lat. *-istī* (*vīdistī*, etc.).[3] Most striking is the agreement of Latin and Greek in specializing *s*-aorist forms as pluperfects. Homeric πέποιθεα, 3d sg. ἐπεποίθει, Attic ἐκεχήνη, 3d sg. ἐλελοίπει come from IE forms ending in *-əsṃ* and *-əse* and are to be compared with the Latin pluperfect in *-eram*, although the conjugation of the latter has been assimilated to that of *eram*, etc.[4] Until the discovery of Hittite it was tempting to find explanations for such forms in the separate history of the several languages, but now the whole matter has been placed in a new light. The Sanskrit use of the 3d pl. ending *-ur* in aorists is matched by the use in Hittite of the corresponding ending *-er*[5] as the sole preterit active ending of the 3d pl. The prefixing of *s* to the 2d sg. ending *-tha* of the perfect (Gk. *-σθα*, Lat. *-istī*) appears in many preterits of the *ḫi*-conjugation, such as *me-mi-iš-ta* 'you said', *ḫal-zi-eš-še-eš-ta* 'you called', *pa-iš-ta* 'you gave', *a-uš-ta* 'you saw'. Less frequently this *s* is prefixed to other endings of the *ḫi*-conjugation (cf. Lat. *vīdistis*, etc.); e.g. *me-mi-iš-tin* 'give ye', *da-a-iš-tin* 'place ye', *ta-a-li-eš-du* 'let him leave', *pa-iš-ti* 'you give', *pa-ra-iš-te-ni* 'ye blow, kindle'. Scarcely less in point are *ḫi*-conjugation preterits with suffixed *s* and no additional personal ending, as *ak-ki-iš*, *ag-ga-aš* 'he died', *da-a-aš* 'he took', *da-a-iš* 'he placed'.

It seems clear that as early as Indo-Hittite times the perfect might have the preterit value, which led to the use of perfect forms or endings in preterit value in Hittite, Sanskrit, Greek (ἦα 'I was', φῆσθα 'you said', etc.), Latin, and Germanic. There was also from the earliest

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[3] The Germanic *-st* probably represents the same conglomerate, at least in part. I am not convinced by W. Petersen's attempt (CP 34.220–7) to separate Lat. *-stī* from Hitt. *-sta*; he doesn't mention Gk. *-σθα* and Germanic *-st*.

[4] The elaborate attempt of Schwyzer, Griech. Gramm. 777 f., to derive the Greek forms from a type cognate with the Sanskrit pluperfect is not convincing. Brugmann-Thumb's remark (Griech. Gramm. 380) that the Greek and Latin formations cannot be completely identical is not true (except for the stem vowel *ā* of the Latin forms). It is not certain that the penultimate vowel of *-eram* is to be identified with that of *-istī* and *-issem*; and if *-eram* had to be traced to Italic *-izam*, that would mean merely that Italic had generalized IE *i* at the expense of *ə* in the formations that led to the Sanskrit *iṣ*-aorist, just as Greek has generalized ε (from IE *ə*; cf. θετός).

[5] See Lang. 16.180.

times a tendency to use the suffix *s* before the perfect endings. Under these circumstances it is plausible to derive Gk. θῆκα, ἧκα, and δῶκα from old unreduplicated perfects.

Now a striking feature of the three Greek aorists θῆκα, ἧκα, and δῶκα is that these stems are almost confined to the singular of the active voice.   The κ-perfect is also confined to the active voice, and in Homer it rarely occurs except in the singular.   We must search for the origin of the formation in the singular active of the heavy bases.   Sapir saw that this situation suggested a combination of a laryngeal at the end of the root with the ending *-xa* (Hitt. *-ḫḫi* < *-xa* = Gk. *-a*) of the perfect.   He inferred that a glide developed between a glottal stop, either ' or ʔ,[6] and the voiceless velar spirant.   If Sapir was correct, then Tocharian *tākā* 'I was' and Gk. ἕστηκα 'I stand' came from IH[7] *staʔxa*, which became something like *staʔqxa* in Pre-Indo-European (where *q* represents a post-velar *k*) and this yielded IE *stāka*.   It is impossible to assume Pre-Indo-European *-ʔkx-* with the same *k* as elsewhere in the language; for that would have yielded IE *-kh-* and Gk. *-χ-*.[8]   Similarly Gk. θῆκα and Lat. *fēci* must go back to IH *dhe'xa* (> *dhe'qxa* > IE *dhēka*), and Gk. δῶκα 'I gave' implies IH *doʔxa*.[9]   For these words we have the Hittite cognates, *te-iḫ-ḫi* 'I place'[10] and *da-aḫ-ḫi* 'I take'. They show that the glide *q* was not present in Hittite; this sound must have developed in Pre-Indo-European.

There is only one Homeric perfect whose *-κ-* is not preceded by a long vowel, namely δείδοικα (i.e. *δέδϝοικα).   This root does not certainly appear outside of Greek and within that language there is nothing to indicate either the presence or the absence of a final laryngeal.   We

[6] I shall write ʔ to represent a glottal stop of either color.

[7] Sapir said Indo-European, and provided no labels for any intermediate stages.

[8] See LANG. 16.179–82.

[9] Hittite documents do not preserve the radical laryngeal of this word, and it must have been one of the glottal stops.   The only clear evidence in favor of ʔ rather than ' is the vowel quality of Lat. *dās*; but, since analogical explanation of this vowel would be difficult, the case seems fairly clear.   There is no evidence in favor of the alternative assumption.

[10] In LANG. 7.115–24 and HG 110, 246–9 I argued that Hitt. *teḫḫi*, *neḫḫi*, etc. contained original long diphthongs that had been shortened by the following *ḫḫ*. The evidence for such shortening was almost all taken from the assumed derivation of the IE perfect ending *-ai* from IH *-axi*.   This latter assumption cannot be maintained, since it is now clear that the IH 1st sg. perfect ending was *-xa*. Whatever the source of *-ai-* in the verbs of the third class of the Hittite *ḫi*-conjugation, we may confidently derive *teḫḫi* from IH *dhe'xa*.

may, therefore, assume that δείδοικα comes from IH *dedwoiʔ-xa*. The existence of a present δειδίσσομαι < *δεδϝικyομαι and also of a perfect δείδω < *δεδϝοια may, however, suggest that in this verb the κ had a totally different origin.

It has often been assumed that the κ of θῆκα, etc., is to be connected not only with the *c* of Lat. *faciō* but also with the similar extension seen in Gk. θήκη 'chest' and Skt. *dhākas* 'container' (not citable). Per Persson[11] very plausibly finds the same element in Gallic Latin *tūcētum*, 'a kind of sausage', Lith. *taukaĩ* 'fat', *táukas* 'a bit of fat', *tunkù*, *tùkti* 'grow fat', Lett. *tûkstu* 'swell, grow fat', OCS *tukъ* 'fat', OHG *dioh* 'Schenkel (Dickbein)' beside Skt. *tauti*, *tavīti* 'is strong', *taviṣas* 'strong', Let. *tōmentum* 'stuffing for cushions', *tōtus* (< *tovitos*) 'whole'; Skt. *pīva-sphākas* 'swelling with fat', Lett. *spèks* 'strength' beside Skt. *sphītás* 'swollen, prosperous'; Lith. *plokas* 'pavement', Gk. πλάξ, -κός 'anything flat and broad' beside Lat. *plānus* 'flat', Gk. πέλανος 'a round cake'; Lith. *pìlkas* 'grey', *pelḗkas*, Lett. *pelēks* 'mouse-colored; Lith. *plḗkstu*, *plḗkti* 'grow mouldy, rot' beside Lith. *pelḗ* 'mouse', *pelḗti* 'grow mouldy', ⟨Skt. *palitás* 'grey-haired'⟩.[12]

It would be possible to assume that in all these words *k* started in the perfect and spread into various related words either during the Pre-Indo-European period subsequent to the development of the glide *q* between a glottal stop and *x* or during the separate history of the several languages. It is more satisfactory, however, to ascribe some at least of the *k*-words to a noun-suffix -*x*; and such a suffix is actually known.

I have shown[13] that the Indo-Hittite suffix -*x* formed factitive verbs and neuter action nouns from adjectives and perhaps also from substantives. These neuter nouns, in case they were based upon *e/o*-stem nouns, gave rise to Indo-European feminine *ā*-stems, and to Hittite masculines in -*aḫḫas*. The same suffix appended to stems ending in a glottal stop would yield Hittite nouns in -*ḫḫas* (cf. *teḫḫi* 'I place' from IH *dheʾxa* and *daḫḫi* 'I take' from IH *doːxa*). But if our assumption of a glide *q* (whence IE *k*) between glottal stop and *x* is correct, IH -*ʔx* should give IE -*k* after a long vowel or *ə* (IH -*eʾx* > IE -*ēk*, IH -*aːx* > IE -*āk*, IH -*ъʔx* > IE -*ək*).

[11] Beiträge zur indogermanischen Wortforschung 561 f.

[12] Persson's remaining example, IE *menk-* : *men-* 'small', must be excluded from the list; Hitt. *maninkwanza* 'short, near' shows that in this word the *k* is as old as Indo-Hittite and therefore not comparable to the *k* in the other words of the list.

[13] LANG. 14.239-44 (1938).

All the words cited above (p. 277) from Persson fit readily into this pattern. IE *dhēk-* < IH *dhe'x* (in Gk. θήκη and Skt. *dhākas*) is precisely parallel to Gk. θῆκα < IH *dhe'xa* (p. 276). As final member of a compound we might expect IH *-dhʋ'x*, which would yield IE *-dhǝk* or, with transfer to masculine gender, *-dhǝks*, and this may be the source of Lat. *-fex* and thematic *-ficus*; it is no longer necessary to trace the final consonant of Lat. *fēc-, fac-* to a single source. Similarly beside Lat. *iaciō* we have a noun-stem in *obex, -icis* 'barrier, hindrance' and *subicēs* 'underlayers, supports', and this may come from IH *-yʋ'x-* > IE *-yǝk-*.

In the case of the Gallic Lat. *tūcētum* and the related words, the radical laryngeal is evidenced by Skt. *tavīti* and *taviṣas*, although there is no way of deciding whether it was ' or ʔ. Skt. *-sphākas* and Lett. *spèks* must, if our hypothesis is correct, come from IH *spe'x-*.[14] Lith. *plokas* beside Lat. *plānus* must represent IH *plaʔx-*, while Gk. πλακός (gen.) is from IH *plʋʔxós*. Lett. *pelēks* is from IH *pʋlé'x-* (with analogical *e* in the first syllable) and Lith. *pìlkas* suggests IH *pḷ'xós* or the like.

But if these words contain IE *-k-* from IH *-ʔx-* it is possible that the familiar noun-suffix *-k(o)-* has a similar origin, and there are some features of the latter suffix that make the conjecture plausible.

An IE *k* from IH *ʔx* must originally have been preceded by *ē* (IH *-e'x-*), *ā* (IH *-aʔx-*), *ō* (IH *-oʔx-*), *ǝ* (IH *-ʋʔx-*), a long syllabic semivowel (IH *-iʔx-, -uʔx-, -ṛʔx-, -ḷʔx-, -ṇʔx-, -ṃʔx-*), or possibly a non-syllabic semivowel (e.g. IH *-nʔx-*) or consonant (see below pp. 281 f.). Most of these combinations occur in the recorded material, and frequently there is independent evidence that the stem to which the suffix is appended originally contained final ' or ʔ.

Perhaps the clearest case is presented by the words in IE *-āk(o)-*. Some of these stand beside stems in IE *-ā-*, e.g. Lat. *fugāx : fuga*, *mināx : minae*, *nūgāx : nūgae*, Gk. Στόᾱξ = Στωικός : στοά; ῥύᾱξ 'mountain torrent' beside ῥοή suggests that the latter may be *ῥυᾱ́ contaminated with καλλίρροος, etc. More frequent are derivatives in IE *-āk(o)-* beside *o*-stems; e.g. Gk. νέᾱξ 'young fellow, OCS *novakъ* 'novice' : νέος; Lat. *vērāx* 'truthful' : *vērus* 'true'; Gk. γαύρηξ 'braggart' : γαῦρος 'exulting'; πίθᾱκος, Ion.-Att. πίθηκος : πίθων (which implies a form *πίθος) 'ape'; Lat. *merācus : merus* 'pure, unmixed'. It has long been recognized that the connecting link between such-pairs as these must be the *ā*-stems (originally abstracts or collectives) that furnish the

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[14] The Skt. *ph* may be taken as evidence for IH *sp'e'x*; but the aspirate may equally well be due to forms with zero grade (*sp'-*).

feminines and neuter plurals of the historic languages. We can now
identify these as Indo-Hittite derivatives with suffix -ʔ- (e.g. IH *newáʔ-* :
newe/o- 'new').[15]

We should expect the Indo-Hittite stem-final -*áʔ*- (whence IE -*ā́*-) to
alternate with -*ʔ*- (whence IE -*ə*-). Consequently Indo-European
derivatives in -*ək(o)*- based upon stems in -*ā*- or -*o*- are in order. It is
not always easy to distinguish IE *ə* from other vowels on the basis of
the available evidence. In Greek we may safely assume either *ā* from
IE *ā* or short *a* from IE *ə* in σπούδαξ 'pestle', Hesych. : σπουδή 'effort,
energy'; τρίβαξ or τρίβακος 'rubbed, worn' : τριβή 'a rubbing'; δίψακος,
a disease involving violent thirst : δίψα, δίψη 'thirst'; λίθαξ 'stony' :
λίθος 'stone'; πλούταξ (or πλοῦταξ) 'rich churl' : πλοῦτος 'wealth'; στόμφαξ
'speaker of στόμφος'; χαύναξ (or χαῦναξ) 'speaker of χαῦνος'. Gk.
μεῖραξ 'young girl', whose short *a* is guaranteed by Aristophanes' verse,
has often been identified with Skt. *maryakás*, epithet of a bull : *maryás*
'man'; the epithet probably means 'male animal, Männchen', and, if
the identification with the Greek word is correct, the original force of
the derivative may have been 'similar to a man but not a man'. Skt.
maryakás may be IE *meryəkós* with *a* instead of *i* under the influence
of the stem vowel of *maryás*, but it is also possible that IE -*yə*- may
regularly yield Skt. -*ya*-; cf. Skt. -*ay*- from IE -*əy*- (Brugmann, KVG
80 f.). For IE -*ək(o)*- in other languages than Greek, see pp. 281–2.

Here belong the Greek words like ἡλιακός 'pertaining to the sun'
beside ἥλιος. In view of the close association of such derivatives with
the nouns in -*ιος* and -*ιον* we must regard the suffix as -*ακός*, and our
present hypothesis requires us to trace it to IE -*əko*- and IH -*ʔx*-.
Nevertheless some IE *yo*-stems alternated with *i*-stems,[16] and the two
categories may have stood in even closer relationship in Indo-Hittite.
The suggestion made by Mahlow[17] that -*ιακός* might be equivalent to
Lat. -*īcus* and Goth. -*eigs* may not be far from the truth. We should
think, however, of Lat. derivatives of *i*-stems (e.g. *clāvīcula*; see p. 280)
rather than of derivatives of *o*-stems or consonant stems.

The Indo-European feminine suffix -*ī/yā*- must go back to one of the
a-colored laryngeals, and, since the functionally similar suffix -*ā*- repre-
sents IH -*aʔ*-,[18] one is inclined, in the absence of any Hittite evidence,
to assume an Indo-Hittite suffix with full grade -*yaʔ*- and reduced grade

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[15] Sturtevant, LANG. 14.245 f.

[16] Brugmann, Grundriss 2.² 2.183.

[17] Die langen Vocale *ā*, *ē*, *ō* in den europäischen Sprachen 102 (1879); cf. Brug-
mann, Grundriss 2.² 1.495.

[18] Sturtevant, LANG. 14.245 f.

-*yь:*- (whence Skt. -*ī*- and Gk. -*ιa*).   Then the Latin feminine agent nouns in -*trīx* (beside Skt. -*trī*) imply IH -*tryь:x* or (by Siever's law) -*triь:x*.   Since the suffix -*ī*- as well as the suffix -*ā*- forms feminines even from original *o*-stems in Sanskrit, it is not surprising to find Russ. *novík* beside OCS *novakъ* 'novice'; that the formation is old is indicated by Lat. *novīcius*.   A similar alternation within Italic is presented by Lat. *cornīx* : Umbrian *curnaco* 'crow'.

In view of feminines and neuters pl. from *i*-stems and *u*-stems with lengthening of the stem vowel (e.g. Skt. *sakhī* 'female friend', *śucī* (neut. pl.) 'bright', *tanús* 'body', *purú* (neut. pl.) 'many', we need have no hesitation in setting up Indo-Hittite collectives in -*i:*- and -*u:*-. From these our suffix -*x*- should yield Indo-European derivatives in -*īk(o)*- and *ūk(o)*- beside *i*-stems and *u*-stems.   Such pairs are Skt. *dṛśīkás* 'spectator', *dṛśīká́* 'appearance' : *dṛśíṣ* 'vision', Goth. *listeigs* 'crafty' : *lists* 'craft', Lat. *clāvīcula*, 'small key' : *clāvis* 'key', *febrīcula* 'slight fever' : *febris* 'fever', Skt. *madhúkas* 'bee' : *mádhu* 'honey', Gk. *κῆρῦξ* 'herald' : Skt. *kārús* 'bard', Lat. *metūculōsus* 'timid' : *metus* 'fear'.

Derivatives in IE -*k(o)*- from IH -*:x*- are to be expected from stems in -*ŋ*- as well as from stems in -*i*- and -*u*-, and I think we must recognize a group of them in the North and West Germanic verbal abstracts in -*ung*- (e.g. OHG *āhtunga* 'persecutio': *āhtōn* 'drive out, banish').   It is generally recognized that the Germanic suffix is a conglomerate of a nasal suffix, our IE -*k(o)*-, and a second nasal suffix.   Since the discovery of Hittite it can scarcely be doubted that the first nasal suffix is the *r/n*-suffix that forms, either alone or in combination with another suffix, so many verbal nouns and infinitives in the related languages.   Its extension by the suffix -*:*- is in line with the use of that suffix after other noun suffixes.   I have pointed out[19] that the suffix -*x*- formed denominative verbs and also nouns that functioned as verbal nouns (e.g. Hitt. *alwanzaḫḫ*- 'bewitch', *alwanzaḫḫas* 'witchcraft' beside *alwanzatar*, *alwanzessar* 'witchcraft' and *alwanzenas* 'bewitched').   If our hypothesis is correct, the IH conglomerate -*ŋ:x*- must have yielded IE -*ŋ̄k(o)*-; it has been customary to set up IE -*ŋk(o)*-, but the long syllabic nasal would yield the same result in Germanic.

While the assumption of IH -*ŋ:x*- is perfectly reasonable in case forms that had the accent on the ultima (e.g. gen. -*ŋ:xós*, dat. -*ŋ:xái*), we should expect a 'locative'[20] to have full grade of the penult, and this

[19] LANG. 14.239–41.

[20] I.e. a form which later came to be specialized in locative function in the Indo-European languages.   Probably Indo-Hittite used the later 'locative' and 'dative' forms interchangeably.   See TAPA 62.18–25.

would give us -*én:xi*.   But, since the laryngeals were early lost between certain non-syllabics (Skt. *dadhmás* 'we place' from IH *dhidh'més*),[21] it is probable that *:* was lost between non-syllabic *n* and *x* before the development of the glide between *:* and *x*.   If, then, we assume an Indo-Hittite declension containing forms like -*énxi* beside -*n:xái*, it is quite in order to assume also contaminated -*énxai*, which provides a satisfactory source for the Greek infinitives in -*έναι*.[22]   At any period -*n:xái* > -*n:qxái* > -*n̥kái* and other oxytone cases might substitute -*en*- for the syllabic nasal under the influence of the cases with accented -*én*-. Such forms are presumably the source of the North and West Germanic verbal abstracts in -*ing*- that alternate with those in -*ung*-.

It is possible that *:* was not lost between a non-syllabic and *x*, in which case not only North and West Germanic -*ing*- but also many other instances of IE -*k(o)*- after a consonant (including the common -*sko*- and -*isko*-) may contain phonologically regular IE *k* from IH *:x*. In this case Gk. -*έναι* must be traced to an Indo-Hittite conglomerate of *r/n*-suffix plus our suffix -*x*- without intervention of the suffix -*:*-. I am inclined to think, however, that wherever the suffix -*k(o)*- immediately follows a phoneme that represents an Indo-European non-syllabic we should assume some secondary process.   Germanic -*ing*- has already been explained from this point of view; Lat. *siccus* 'dry' beside *sitis* 'thirst' is probably syncopated from *siticos (< *sitūkos; see below, p. 282).   Forms like Lat. *homunco- (*homunciō, homunculus*) represent a relatively late spread of the suffix -*k(o)*- to new territory.   Very likely the suffix -*sko*- (including -*isko*-) is an entirely independent formation.

There is fairly abundant evidence for IE -*āk(o)*-, -*ək(o)*-, -*īk(o)*-, -*ūk(o)*-, and -*n̥k(o)*-.   No one will be disturbed by the rarity of IE -*ōk(o)*- (we have Lat. *vēlōx, celōx*, etc.) or by the apparent lack of -*r̥k(o)*- (-*n̥k(o)*- represents the *r/n*-stems), -*l̥k(o)*-, and -*m̥k(o)*-.   The rarity of -*ēk(o)*- (aside from θήκη and other forms mentioned above on p. 277 we have some Lat. diminutives in -*ēcula*) reflects the lack of a suffix -*'*- corresponding to -*:*-.

Our hypothesis provides for the first time a plausible explanation for the treatment of *o*-stems when extended by the suffix -*k(o)*-.   We have seen that the result is commonly IE -*āk(o)*- or -*ək(o)*-, less frequently

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[21] The facts are differently interpreted by some, but I cannot agree with them.

[22] The laryngeal theory must regard the infinitival -*αι* as the dative ending -*ei* modified by a preceding laryngeal (*:* or *x*).   My attempt (TAPA 62.21–4) to trace this -*αι* to IH -*bi* before a pause never satisfied me and has apparently convinced nobody else.

IE -*īk(o)*-. More striking still is the fact that no evidence for IE
-*ek(o)*- or -*ok(o)*- in derivatives from *o*-stem nouns is presented by
Greek, Celtic,[23] or Armenian. Latin evidence is here ambiguous on
account of the vowel weakening in medial syllables; *modicus* may represent an earlier **modocos*, but Greek τρίβακος, μεῖραξ, etc. suggest rather
Ital. *modakos* (*a* < *ə*), and there is nothing in the way of assuming Ital.
modikos (see below). Germanic words like Goth. *stainahs*, OHG *steinag*
'stony' : Goth. *staina*- 'stone' and Goth. *waúrdahs* 'λογικός' have been
supposed to contain IE -*ok(o)*-; but they may equally well come from
IE -*ək(o)*-. The same is true of the few Baltic words in -*aka*- and
Slavic words in -*oko*-.

It is only in Indo-Iranian that we are forced to assume either an
innovation or IE *o* (or *e*) before the suffix -*k(o)*-. Such words as Skt.
aśvakás 'accursed horse' beside *aśvás* 'horse' and *ántakas* 'ender' beside
ántas 'end' have generally been supposed to represent an inherited type
(IE *eḱwokos* or the like). But since there seems to be nothing comparable in the related languages it is safer to assume that in Indo-
Iranian also the inherited types were -*āka*- from IE -*āk(o)*- and -*ika*-
from IE -*ək(o)*-. In primitive Indo-Iranian the stem-vowel *a* of the
primitive noun (e.g. Skt. *ántas*) led to shortening of the penultimate
vowel of the derivative (**ántākas* > *ántakas*). This observation sheds
new light upon the few Vedic words in -*āka*- beside *a*-stems, which
Edgerton[24] finds difficult; they are probably isolated survivals of the
original type.

The Indo-European type -*ək(o)*- may survive in many Indo-Iranian
words in -*ika*-. Since IE -*ə*- in these words came from IH -*ʜ·*- beside
-*aʜ*-, and since this is the source of the Indo-European feminine suffix
-*ā/ə*-, it is natural to assume that the numerous Sanskrit feminines in
-*ikā* beside masculines in -*akas* represent IE -*əkā*. Edgerton's[25] suggestion that the penultimate vowel of -*ikā*- is to be connected with the
feminine suffix -*ī/yā*- is less probable both on account of the quantity
of the *i* and because the feminine of *o*-stems is not commonly formed
with the suffix -*ī/yā*- outside of Indo-Iranian.

It must, however, be admitted that Skt. -*ikas* frequently stands in
relation to *i*-stems (e.g. *agnikas* : *agniṣ* 'fire'). Furthermore there is
abundant evidence in the related languages for IE -*ik(o)*- (e.g. Gk.

[23] H. Pedersen, Vergleichende Grammatik der keltischen Sprachen 2.29.
[24] The *k*-suffixes of Indo-Iranian 1.17.
[25] Loc. cit. 3 f.; so Brugmann, Grundriss 2.² 1.490. The Lithuanian phenomena that Edgerton compares (84 f.) are quite dissimilar.

ἱππικός, νυμφικός, ἐθνικός, Osc. túvtiks, Goth. gabigs). This type must have arisen in Indo-European times by a process similar to the Indo-Iranian assimilation of inherited *ántākas to ántas (p. 282). That is *egnīkos became *egnikos under the influence of *egnis 'fire'.

The suffix-form -uk(o)- may, of course, be explained similarly by the influence of primitives with stem ending in u.

As we have noted, IH -ʔx- between vowels appears in Hittite as -ḫḫ-, but it is impossible to identify this complex with certainty in any of the few Hittite noun stems that show suffixal -ḫḫ-. It may possibly occur in menaḫḫanda 'opposite, against', which I have analyzed[26] as acc. sg. *menaḫḫan plus -da 'to'. The noun *menaḫḫa- must be connected with Hitt. meni 'face', and this may plausibly be assigned to the IE root men- 'project', whence come Lat. mōns and minae (no doubt with i from compounds like ēmineō, immineō, prōmineō, especially ēminēns, prōminēns). There is no formal difficulty in the way of connecting the Hittite noun directly with Lat. mināx, and the meaning of the Latin word, 'jutting out, threatening', may be derived from the meaning 'oppositio' which I have assumed for the Hittite word. The adjectival use of the Latin word may have arisen from the genitive of the substantive in the way suggested[27] for Hitt. annanuḫḫas 'trained' or 'training' from 'of training'. A similar explanation is available for the adjectival use of IE -k(o)- in general.

The factitive meaning which usually attaches to the Hittite verbal suffix -aḫḫ- can only rarely be detected in the Indo-European nouns and adjectives in suffix -k(o)-. Examples are Vedic ántakas 'ender', Homeric (Il. 22.490) ἦμαρ ὀρφανικόν 'day that makes one an orphan', Lat. imbricus 'rain-bringing', στόμφαξ 'speaking στόμφος', χαύναξ 'speaking χαῦνος', nūgāx 'speaking trifles', vērāx 'speaking the truth'. It is easy to see, besides, how a factitive suffix should have incorporated itself in Lat. -fex and -trīx. Nevertheless we must recognize that even in Indo-European times the factitive force, if indeed it was the primary force of the suffix, had largely given way to other semantic values. Perhaps the prevailing force was 'like the primitive but not identical with it'; cf. Gk. νέαξ 'young man', OCS novakъ 'Neuling', Gk. μεῖραξ 'young girl', Vedic maryakás 'male animal' : maryás 'young man'.

The hypothesis that IH ʔx became IE k, which was suggested to Sapir by comparison of Gk. ἕστηκα and Toch. tākā with the Hittite 1st sg. ending -ḫḫi, thus receives strong confirmation from a study of the

[26] LANG. 14.241.
[27] LANG. 14.242 and fn. 12.

suffix -$k(o)$- in the Indo-European languages.   In conclusion we may remark that this striking innovation, which is common to all the Indo-European languages, but does not appear in Hittite, is one more proof of the correctness of the Indo-Hittite theory.[28]

[28] See most recently LANG. 15.11–19; The Linguistic Institute (University of Michigan Official Publication 41, No. 5) 3–8.

THE PHONOLOGY OF GAULISH

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[An inspection of the known Gaulish vocabulary makes it possible to tabulate the Gaulish correspondences of IE sounds in most positions without recourse to hypothetical Gaulish forms.]

Surprisingly enough, there exists at the present time no complete tabulation of the Gaulish correspondences of Indo-European sounds. From Zeuss to Pedersen-Lewis,[1] the grammatical treatises, placing their chief emphasis on the later Celtic dialects, resort to an incomplete treatment of the Gaulish sounds or to a mere statement of their assumed development. Dottin constitutes the exception;[2] but this excellent work of two decades ago—still the most comprehensive study— shows numerous gaps in the discussion of the sounds, and the very lapse of time necessitates revision and supplementation. Dottin fails, for instance, to treat the liquid and nasal sonants and schwa; his idea of 'velars' is superseded;[3] his assertion that the group *pt* remains [4] does not seem to coincide with the facts.

It might be supposed that the lack of completeness is due to a paucity of material. But a consideration of the body of Gaulish available proves this not to be so. It is the purpose of this paper to construct a table, based on examples from Gaulish itself, of the correspondences of all the IE sounds in their various positions. In a few instances no certain example is found, and this fact is indicated in the body of the paper.[5]

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[1] H. Lewis and H. Pedersen, A Concise Comparative Celtic Grammar; Göttingen, 1937.

[2] G. Dottin, La Langue Gauloise; Paris, 1918.

[3] Dottin 98.

[4] Dottin 98.

[5] This paper had its origin in work done in a seminar in Gaulish conducted by Prof. Louis H. Gray at Columbia University. The writer owes much to Professor Gray, both in training and personal interest. Thanks are due also to Prof. Vernam Hull of New York University, who read the manuscript and offered many suggestions.

The Voiceless Occlusives

IE	Gaulish	Irish	Welsh
p-	–	–	–
-p-	–	–	–
pt	*χt*	*cht*	*ith, eth*
t-	*t-*	*t-*, etc.	*t-*, etc.
-t-	*-t-*	*-th-*, etc.	*-t-, -d-*, etc.
k-	*c-* (*k-*)	*c-*	*c-*
-k-	*-c-*	*-c-*, etc.	*-ch-*, etc.
q-	*c-*	*c-*	*c-*
-q-	*-c-*	*-ch-*, etc.	*-ch-*, etc.

p- > 0:

> **pet-no-*: Gaul. *etnoso-* (cf. *Etnosus*), Ir. *én*, W *etn, edn* 'bird', Skt. *pat-* 'fly', Lat. *penna*.

> **peri-*: Gaul. *are-* 'before, in front of' (cf. *Aremorica*), Ir. *air*, W *ar* 'on', Gk. παρά, Goth. *faúra* 'before, in front of'.

> **prtu-*: Gaul. *ritu-* (cf. *Ritumagus*), Ir. *rith* in *Humarrith*, OW *rit*, W *rhyd* 'ford', Lat. *portus* 'port', OHG *furt* 'ford'.

-p- > 0:

> **upo-*: Gaul. *vo-* (cf. *Vo-reto-*), Ir. *fo*, Bret. *guo*, W *go-* 'under', Skt. *úpa* 'unto', Gk. ὑπό, Lat. *s-ub*.

> **uper-*: Gaul. *ver-* (cf. *Ver-cingetorix*), Ir. *for* 'over, on', W *gwr-*, Bret *gour* 'on', Gk. ὑπέρ, Lat. *s-uper*.

pt > *χt*:

> **septṃ-*: Gaul. *sextametos* 'seventh', Ir. *secht*, W *seith, saith*, Lat. *septem*.

In Gaulish, as in Celtic as a whole, IE *p* never remains as such. In most positions it disappears. Thus in initial and intervocalic position the Gaulish correspondence is zero. In pre-consonantal position, however, IE *p* seems to have become a spirant, if one may assign such a value to the symbol *x*. Two words have in the past caused difficulty: *Moenicaptus* and *Neptacus*. The former was linked with Lat. *captus*, the latter with Lat. *nepos*, and both were cited to support the contention that the IE group *pt* remained in Gaulish. Both words are, however, dubious readings. *Moenicaptus* occurs only in Livy, and the manuscripts show *Moenicoeptus*. There is no good reason to assume that the word is actually a Gaulish form. Dottin, who gives *pt* as the Gaulish equivalent of IE *pt*,[6] says, in a footnote to the form *sextan-*:

[6] Dottin 103.

'Si cette étymologie est exacte, il faut renoncer à expliquer *neptaco-*, *-capto-* par l'irlandais *necht, cacht*; mais la lecture n'est pas sûre.'[7]   In the light of the Graufesenque material,[8] however, there is no doubt about the existence of a form *sext-*.[9]   Dottin states elsewhere that the *p* in *Neptacus* might well be an *r*, and the form *Nertacus* (cf. W *nerthog* 'powerful') does actually occur.[10]   The expected equivalent of *capto-* occurs in the proper noun *Caxtos*.[11]   Moreover, Louis H. Gray,[12] in his interpretation of Dottin, inscr. 49, makes a convincing case for the reading (c)AXTAC(o)BITI 'those who live by means of captives, slave dealers'.   If this reading is correct, the development of IE *pt* > Gaul. *χt* is further attested.   At any rate, the evidence of *sextametos* is certainly sufficient proof.

Furthermore, other examples of *p* + consonant show a similar development and might indicate that pre-consonantal *p* became a spirant in every case, although this is not demonstrable, in view of the scarcity of direct evidence: **oup-su-*: Gaul. *Uxello-*, Ir. *uasal* 'lofty, noble', W *uchel* 'high'; **qreip-sos*: Gaul. *Crixos*, W *crych* 'curly', Lat. *crispus* 'curly'.

Whether a preceding consonant had a similar effect cannot be shown. Brugmann[13] assumes the development *-sp-* > *-sk-* in Prim. Celtic, citing OIr. *fescor*, W *ucher* 'evening', Lat. *vesper*. He also quotes *Crixos*—incorrectly, it would seem.[14]

t- > *t-*:

    *teuto-: Gaul. *teuto-*, *touto-* (cf. *Teuto-matos, Toutomatos*), Ir. *túath*, W *tud*, Goth. *þiuda* 'people'.

    *trei-: Gaul. *trī-*, Ir. *trí, tri*, W *tri*, Lat. *trēs*, Goth. *þreis* 'three'.

-t- > *-t-*:

    *k̑at-: Gaul. *catu-* (cf. *Catu-riges, Catu-maros*), Ir. *cath*, W *cat*, *cad* 'battle', OHG *hadu-* in *Hadu-brand*, etc.

    *pet-no-: Gaul. *etnoso-* (cf. *Etnosus*), Ir. *én*, W *etn*, *edn* 'bird', Skt. *pat-* 'fly', Lat. *penna*.

[7] Dottin 286.

[8] F. Hermet, La Graufesenque; Paris, 1934.

[9] Cf. L. Weisgeber, Die Sprache der Festlandkelten, Deutsches Archäologisches Institut, Römisch-Germanische Kommission 20.190 (1930).

[10] Dottin 286.

[11] A. Holder, Altcelt. Sprachschatz 1.876.

[12] Professor Gray has kindly granted the writer access to his notes, yet unpublished, on the Gaulish inscriptions.

[13] Brugmann, Gdr.[2] 1.516-7.

[14] Cf. Walde-Pokorny 2.572, where the form is given as **qreip-sos*.

*$q^u ei$-tu-: Gaul. *bitu*- (cf. *Bitu-riges*), Ir. *bith*, W *bit*, *byd* 'world',
Gk. βίος, Lith. *gýti* 'aufleben'.

$\hat{k}$- > k-:

*$\hat{k}at$-: Gaul. *catu*- (cf. *Catu-riges*, *Catu-maros*), Ir. *cath*, W *cat*,
cad 'battle', OHG *hadu*- in *Hadu-brand*, etc.

*$\hat{k}aito$-: Gaul. καιτο-, *ceto*- (cf. καιτοβριξ, *Ceto-briga*), W *coed*
'tree, wood', Goth. *haiþi*, NHG *Heide*.

*(s)$\hat{k}ambo$-: Gaul. *cambo*- 'bend, turning; peninsula'[15] (cf. *Cambo-dunum*), Ir. *camm*, W *cam* 'crooked', Gk. σκαμβός 'crooked-legged'.

-$\hat{k}$- > -k-:

*$de\hat{k}m$-: Gaul *decametos* 'tenth', Ir. *dechmad*, W *degfed*, Lat. *decimus*, etc.

*$mar\hat{k}o$-: Gaul. *marco*- (cf. μαρκαν acc. 'horse'), Ir. *marc*, W *march*,
OHG *mar(a)h* 'horse'.

The form *oxtunnito* (for *oxtumeto*) 'eighth' presents a problem. By
ordinary development $\hat{k}t$ should yield *ct* (*kt*) in Gaulish, cf. *ambactus*.
One is reminded of Armenian *ut'*, which Brugmann considers to be
from a form *$opt\bar{o}$, cf. El. ὀπτώ, which takes the *p* from *septm*.[16] If
such a process operated in Pre-Celtic, then the development *pt* > χ*t*
would naturally yield *oxt*-. It may be, however, that *ambactus* is
much older. There are Gaulish forms with *octo*- (cf. *Octodurus*), and
although these have nothing to do with the word for eight, they are,
like *ambactus*, instances of the preservation of $\hat{k}t$.

q- > *c*- (*k*-):

*$qor\underset{\centerdot}{i}o$-: Gaul. *corio*- (cf. *Corio-vallum*), Ir. *cuire* 'band, host',
Goth. *harjis* 'Heer'.

*$q\bar{a}ro$-: Gaul. *cāranto*- (cf. *Cārantus*, *Cārantillus*), OIr. *car(a)e*,
gen. *carat* 'friend', W *car*, pl. *ceraint* 'friend', Lat. *cārus*, Goth.
hōrs.

*qob-: Gaul. *cob*- (cf. *Vercobius*), Ir. *cob* 'victory', Eng. *hap*, OIcel.
happ 'lucky deed', OCS *kobĭ* 'augurium'.

-*q*- > -*c*-:

*$leuq$-: Gaul. *leucetio*- (cf. *Leucetios*, god of lightning), OIr. *lóchet*,
W *lluched* 'lightning', W *llug* 'light', Lat. *lūx*.

*mr_eq-: Gaul. *bracem* acc. sg. 'genus farris', Ir. *mraich*, *braich*, W
brag 'malt', Lat. *marcēre* 'wither'.

þ > *t*:

*$\acute{r}k\dot{p}o$-: Gaul. *arto*- (cf. *Artos*, *Artio*), OIr. *art*, W *arth* 'bear', Skt.
*$\acute{r}k\d{s}a$-$\d{h}$, Gk. ἀρκτός, Lat. *ursus* 'bear'.

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[15] Weisgerber 196.
[16] Brugmann, Gdr.² 2.19.

There is some doubt concerning the existence of IE p. Kuryłowicz explains Skt. *kṣam-*, Gk. χθών, Avest. *zəm-*, etc., on the basis of their relationship with Hittite *tekan*, Agnean *tkan*, Kuchaean *ke* (acc.) 'earth'. He assumes the development: $tk > t\mathfrak{s} > t\mathfrak{s} > k\mathfrak{s}$.[17] This may be correct as far as *kṣam* is concerned, but it hardly seems to apply to χθών.

At any rate, p is a symbol for a definite phoneme, whether its precise phonetic value is determinable or not. Attempts to explain it as a secondary development seem unconvincing.

THE ASPIRATED VOICELESS OCCLUSIVES

IE	Gaulish	Irish	Welsh
ph	–	–	–
th	*t*	*t, th*	*t, d*
k̂h	?	?	?
qh	*c?*	*c, ch*	*c, g*

ph > 0:

*phel-: Gaul. *ollo-* 'great, mighty' (cf. *Ollo-gnatus*), Ir. *oll* 'large, great', Lat. *pollens* 'able, powerful', *pollex* 'thumb', Skt. *phalam* 'fruit, reward'.

th > *t*:

*reth-: Gaul. *reto-* (cf. *Vo-reto*), Ir. *rethim* 'I run', W *guo-redaf* 'succurrō', *rhed* 'course', Lith. *ritù, risti* 'roll', Skt. *ratha-* 'wagon'.

There is no clear evidence of the existence of *k̂h* in Celtic, and *qh* seems to find scant representation. Thurneysen sees *qh* in OIr. *scian* 'knife' : Skt. *chid-* 'cut off', Gk. σχίζω, Lat. *scindō* 'split'. There seem to be no examples in Gaulish, unless Holder is right in connecting the river name *Scianea* (modern *Siagne*) with OIr. *scian*.[18]

THE VOICED OCCLUSIVES

IE	Gaulish	Irish	Welsh
b-	*b-*	*b-*, etc.	*b-*, etc.
-b-	*-b-*	*-b-*, etc.	*-b-, -f-*, etc.
d-	*d-*	*d-*	*d-*
-d-	*-d-*	*-d-*, etc.	*-dd-*
ĝ-	*g-*	*g-*	*g-*
-ĝ-	*-g-*, –	*-g-*, –	–
q̑-	*g-*	*g-*	*g-*
-q̑-	*-g-*, –	*-g-*, –	

17 J. Kuryłowicz, Quelques problèmes de consonantisme indoeuropéen, Prace Filologiczní 17.88–9 (1936).
18 Holder 1.1397.

b- > b-:

ben-: Gaul. *benno-* (cf. *Canto-bennicus*), Ir. *benn*, W *ban* 'peak', WFlem. *pint* 'Spitze'.

As might be expected, examples of IE initial *b* are extremely scarce. The words cited are, moreover, suspect in that they occur only in Celtic and Germanic.

-b- > -b-:

*qob-: Gaul. *cob-* (cf. *Vercobius*), Ir. *cob* 'victory', Eng. *hap*, OIcel. *happ* 'lucky deed', OCS *kobĭ* 'augurium'.

*treb-: Gaul. *treb-* (cf. *Atrebates*), Ir. *treb* 'dwelling', W *tref* 'town', Osc. *triíbúm* 'aedificium', OE *þrep*, *þorp* 'village'.

d- > d-:

*déḱm̥-: Gaul. *decametos* 'tenth', Ir. *dechmad*, W *degfed* 'tenth', Lat. *decimus*, etc.

*dereu̯o-: Gaul. *dervo-* (cf. *Dervus*, *Derva*), Ir. *derucc* 'glans', *daur* 'oak', W *derw* 'oak', Skt. *dāru* 'wood, log', Goth. *triu* 'tree'.

-d- > -d-:

*bhoudi-: Gaul. *boudi-*, *bodi-* (cf. *Boudus*, *Boudillus*), Ir. *bóid*, *búaid* 'victory', W *budd* 'profit, gain', MLG *bute* 'booty', OIcel. *byti* 'Beute, Tausch'.

*su̯ādu-: Gaul. *svādu-* (cf. *Svadugenus*, *Suadurix*), Ir. *Sadb*, W *hawdd* 'easy', Lat. *suāvis* (< **su̯ādu̯is*), Skt. *svādú-* 'sweet', Eng. *sweet*.

ĝ- > g-:

*gen-: Gaul. *enigeno-* (cf. *Enigenus*), OIr. *ingen*, Ogam *inigena* 'daughter', W *geneth* 'girl', Lat. *indigena*, etc.

-ĝ- > -g-, 0:

*rēĝ-: Gaul. *Rīgo-*, *Rīo-*, OIr. *rí*, oblique cases *ríg* 'king', W *rhi* 'king', Skt. *rājā*, Lat. *rēx*.

q̑- > g-:

g̑er̥no-: Gaul. *tri-garanos* 'with three cranes', W *garan* 'crane', Gk. γέρανος 'crane', OHG *cranuh* 'crane', OCS *žeravь* 'crane'.

-q̑- > -g-, 0:

*(s)teq̑-: Gaul. *Tigernus*, OIr. *teg*, *tech* 'house', Gk. στέγω 'cover', Lat. *tegō*, *toga*, OHG *dah* 'roof', etc.

*i̯euq̑-: Gaul. *Ver-iugo-dumnus*, W *iau*, OCorn. *ieu* 'yoke', Lat. *jugum*, Goth. *juk*, Skt. *yugá-* 'yoke'.

Intervocalic *g* (< *g* or any other source) evidently went through the process of spirantization and ultimate disappearance in Gaulish, as is indicated by the spellings *Rio-maros* beside *Rigo-maros*, *vertraha* beside

vertraga, *Mounus* beside *Mogounus*, *Luddunum* beside *Lugduno*, *Lug-donum*, *Lugdunum*. The word *caio* must be from a form *cagio (cf. W *cae*). *Boio-* is clearly an alternate form for *bogio-*, as is attested by *Bogionius* beside *Boionius*, *Com-boio-marus* beside *Ande-com-bogios*. The *i* is thus a remnant of the spirant and not the indication of an *i*-diphthong.

An interesting example of the operation of this process may be seen in Dottin, inscr. 38. This inscription is perfectly octosyllabic, provided the word *Brigindoni* be read *Brindoni*. *Brigindoni* would then be an instance of conservative orthography, preserving the symbol for a *g* no longer pronounced as such. The change is seen orthographically in the spellings *Mogounus*, *Mounus*. Macalister notes the same change in Ogam inscriptions.[19]

THE ASPIRATED VOICED OCCLUSIVES

IE	Gaulish	Irish	Welsh
bh-	*b-*	*b-*	*b-*
-bh-	*-b-*	*-b-*	*-b-*, etc.
dh-	*d-*	*d-*	*d-*
-dh-	*-d-*	*-d-*	*-dd-*
ǧh-	*g-*	*g-*	*g-*
-ǧh-	*-g-*	–	–
ǫh-	*g-*	*g-*	*g-*
-ǫh-	*-g-*	–	–

bh- > *b-*:

*bh₋rətú-: Gaul. βρᾱτουδε 'ex judicio, merito', Ir. *bráth*, W *braut*, *brawd* 'judgment'.

*bhrātēr/ōr: Gaul. *bratron-*, Ir. *bráthir*, W *brawd*, Bret. *breuzr* 'brother', Lat. *fráter*.

*bhoudi-: Gaul. *boudi-*, *bodi-* (cf. *Boudus*, *Boudillus*), Ir. *bóid*, *búaid* 'victory', W *budd* 'profit, gain', MLG *bute*, OIcel. *byti* 'booty'.

-bh- > *-b-*:

*ǧhabh(o)lo-: Gaul. *gabalus* 'gallows', Ir. *gabul*, W *gafl* 'fork', OHG *gabala* 'fork', etc.

*orbho-: Gaul. *orbio-* (cf. *Orbius*), OIr. *orb(b)e*, *orpe* 'heir, heritage', *comarbe* 'Miterbe', Lat. *orbus* 'orphan', Goth. *arbi* 'inheritance'.

Other examples of IE *bh* are seen in the dative plural endings: *matrebo* 'matribus', *gobedbi* 'fabrīs', *namausikabo* (proper adjective).

[19] R. A. S. Macalister, The Secret Languages of Ireland 16 (Cambridge, 1937).

dh- > d-:

dheub(h)-: Gaul. *Dubis* 'le Doubs', *Uerno-dubrum*, Ir. *dub*, W *dub*, *du* 'black', Goth. *daufs* 'deaf', Gk. τῦφος 'smoke'.

-dh- > -d-:

medhịo-: Gaul. *medio-* (cf. *Mediolānum*), Ir. *mide*, W *meddwl* 'middle', Lat. *medius*, Skt. *mádhyaḥ*.

roudh-: Gaul. *Roudus*, Ir. *ruad*, W *rhudd* 'red', Goth. *rauþs*, Lat. *ruber* 'red'.

ĝh- > g-:

ĝhịōm-: Gaul. *Giam-* (name of month in Coligny calendar), *giam pri lag* 'indication de jour', Ir. *gem-*, later *gaim*, W *gaem, gaeaf* 'winter', Lat. *hiems*.

-ĝh- > -g-:

ụeĝh-: Gaul. *vegeiorum*, gen. pl. 'kind of boat',[20] *vegnio-* 'thème de nom propre', Ir. *fén* (< *ụeĝhno-*), W *gwain* 'chariot', OHG *wagan*, Lat. *vectus*, etc.

gh- > g-:

ghr-ṇd(h)-o-: Gaul. *granno-* 'thème de nom propre', Ir. *grend* 'beard', W *grann* 'eyebrow', OHG *grana*, OIcel. *grǫn* 'mustache; needle', MHG *gran* 'hair of the beard'.

-gh- > -g-:

logh-: Gaul. *logan*,[21] Ir. *lige* 'grave', W, Bret. *go-lo* 'burial', Gk. λόχος, OHG *laga* 'Hinterhalt, Lage'.

THE LABIALIZED VELARS

IE	Gaulish	Irish	Welsh
q^u	*p*	*c*	*p*
q^u	*b*	*b*	*b*

qu > p:

quetụor-: Gaul. *petvar-* 'four', W *pedwar*, Ir. *cethir*, Lat. *quattuor* 'four'.

quenque-: Gaul. *pinpetos* 'fifth', Ir. *cóicet*, W *pymhet, pummed* 'fifth', Corn. *pympes* 'fifth', Lat. *quīntus*.

The *p* in *epo-* 'horse', *epad* 'horseman', etc., is from *kụ*, rather than from *qu*: Ir. *ech*, Bret. *ep* 'horse', Lat. *equus*, Skt. *açva* 'horse'. *Etic* 'and also' (Dottin, inscr. 33), compared by Dottin to Lat. *atque*, ought also to show *p*, if this were the case. The word belongs rather with Lat. *-ce* (*eti* + *ce*).

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[20] Dottin 296.

[21] The form *lokan* occurs in the inscription of Todi, but this is in an alphabet which has no separate characters for *b, d, g*.

$q^u > b$:

> $q^u ei$-: Gaul. *bitu-* (cf. *Bituriges*), Ir. *bith*, W *bit*, *byd* 'world', Gk. βίος.

> $q^u et$-: Gaul. *betulla* 'birch', W *bedw*, Bret. *bezuen* 'birch', OE *cuidu* 'resin'.

Examples of $q^u h$ in Gaulish are very rare. In Celtic as a whole the development seems to be $q^u h > g$, cf. OIr. *gonim* 'I wound, kill', Skt. *hánti* 'he kills', Gk. θείνω 'kill', Lith. *genù* 'drive'. (This is a striking correspondence, in view of the development $q^u > b$.) Perhaps a Gaulish example may be seen in the form *Con-gonneto-dubnus*.

The Consonantal Liquids and Nasals

IE	Gaulish	Irish	Welsh
l-	*l-*	*l-*	*ll-*
-l-	*-l-*	*-l-*	*-l-*
r-	*r-*	*r-*	*rh-*
-r-	*-r-*	*-r-*	*-r-*
m	*m*	*m*	*m*
n	*n*	*n*	*n*

$l- > l-$:

> *$l\bar{\imath}\gamma o$-: Gaul. *Livius*, Ir. *lí*, W *lliw*, Bret. *liou* 'color', Lat. *līveō* 'to be of a bluish color', *līvidus* 'bluish'.

> *$leuq$-: Gaul. *leucetio-* (cf. *Leucetios*, god of lightning), OIr. *lóchet*, W *lluched* 'lightning', W *llug* 'light', Lat. *lūx*.

$-l- > -l-$:

> *al-: Gaul. *allo-* (cf. *Allo-broges*), Ir. *al-anman* 'other name', MW *allfro* 'foreign', Lat. *alius*, Goth. *aljis* 'other'.

> *$bhilo$-: Gaul. *Bil-* in proper names, Ir. *bil* 'good', OHG *bil-luh* 'suitable, seemly'.

$r- > r-$:

> *$r\bar{e}\hat{g}$-: Gaul. *Rīgo-*, *Rīo-*, OIr. *rí*, oblique cases *ríg* 'king', W *rhi* 'king', Lat. *rēx*, *rēgis*, Skt. *rājā*.

> *$roudh$-: Gaul. *Roudus*, Ir. *ruad*, W *rhudd* 'red', Goth. *rauþs*, Lat. *ruber* 'red'.

$-r- > -r-$:

> *$q\bar{a}ro$-: Gaul. *caranto-* (cf. *Carantus*, *Carantillus*), Ir. *car(a)e*, gen. *carat* 'friend', W *car*. *ceraint* 'friend', Lat. *cārus*, Goth. *hōrs*.

> *$p_e ri$-: Gaul. *are-* (cf. *Aremorica*), Ir. *air*, W *ar* 'on', Gk. παρά, Goth. *faúra* 'before, in front of'.

m > *m*:

marko-: Gaul. *marco-* (cf. μαρκαν acc. 'horse'), Ir. *marc*, W *march* 'horse', OHG *mar(a)h* 'horse'.

medhio-: Gaul. *medio-* (cf. *Mediolānum*), Ir. *mide*, W *meddwl* 'middle', Lat. *medius*, Skt. *mádhyaḥ*.

samo-: Gaul. *samo-* (Coligny calendar and proper names), Ir. *sam*, OW *ham*, W *haf* 'summer', Avest. *ham-* 'summer', Arm. *am* 'year'.

ḷmos-: Gaul. *Limo-*, Ir. *lem*, W *llwyf* 'elm', G *Ulme*.

But *mr* > *br*: Gaul. *bracem* acc. sg. 'genus farris', Ir. *mraich, braich* 'malt', W *brag* 'malt', Lat. *marcēre* 'wither' (< *mrₑq-*); Gaul. *Allobroges* (< *mrogh-*), Ir. *mruig, bruig*, Bret., W *bro* 'country', Goth. *marka* 'border region'.

n > *n*:

ner-: Gaul. *nerto-* (cf. *Nertacus, Cobnertus*), Ir. *nert*, W *nerth* 'strength, manliness', Skt. *nar-* 'man'.

neuos-: Gaul. *nevio-, novio-* (cf. *Nevio-dunum, Novio-dunum*), OIr. *nu(a)e, nue,* 'new', W *newydd*, Lat. *novus*, Goth. *niujis* 'new'.

seno-: Gaul. *seno-* (cf. *Seno-gnātus*), Ir. *sen* 'old', W *hen* 'old', Lat. *sen-ex*, etc.

dūn-: Gaul. *dunum* 'citadel, town', Ir. *dún* 'citadel', W *dinas* 'city, fortress', OIcel. *tún* 'fenced-in place', NHG *Zaun* 'fence'.

nt remains: *sento-*: Gaul. *sento-*, Ir. *sét*, W *hynt* 'way', Goth. *sinþs*, OHG *sind* 'path, way'.

nd remains before a vowel: *qando-*: Gaul. *cando-*, W *cann* 'white', Lat. *candeō*, etc.

nd + *n* assimilate to *nn*: *benno* < *bend-no*.

The Liquid and Nasal Sonants

IE	Gaulish	Irish	Welsh
ḷ	*li*	*li, le*	*li, lly*
r̥	*ri*	*ri*	*ri, rhi*
m̥	*am*	*im*	*am*, etc.
n̥	*an*	*in*	*an*
ḹ	*lā, āl*	*lā, āl*	*law, al*
r̥̄	*rā, ār*	*rā, ār*	*raw, ar*
m̥̄	*mā*	varies	varies
n̥̄	*nā*	*na, an*	*naw, an*

ḷ > *li*:

pḷtₑno-: Gaul. *litano-* (cf. *Litanobriga*), Ir. *lethan*, W *llydan* 'broad, wide', Gk. πλάτανος.

*l̥mos-: Gaul. *Limo-*, Ir. *lem*, W *llwyf*, NHG *Ulme* 'elm'.

r̥ > ri:

   *pr̥tu-: Gaul. *ritu-* (cf. *Ritu-magus*), Ir. *rith* in *Humarrith*, OW *rit*,
   W *rhyd* 'ford', OHG *furt* 'ford', Lat. *portus* 'port'.

   *bhr̥gh-: Gaul. *briga-* (cf. *Brigantes*), Ir. *bri*, W *bry* 'mountain',
   NHG *Burg*, etc. (*Berg* from a different grade).

m̥ > am:

   *m̥bhi-: Gaul. *ambi-*, Ir. *imb*, W *am*, *amm-* 'around', Lat. *amb-*,
   Gk. ἀμφί 'around'.

   *km̥tóm: Gaul. *canto-* (assimilation of *mt* > *nt*), Ir. *cét*, W *cant*, *can*
   'hundred', Lat. *centum*, etc.

n̥ > an:

Examples are difficult to find.   The negative prefix *an-* (cf. *an-mat*,
Coligny calendar) seems to show the expected development: IE *n̥*:
Gaul. *an-*, Ir. *in-*, W *an-*, Skt. *a-*, Gk. *a-*.   Brugmann[22] also sees *n̥* in
litano- (< *pl̥tn̥no-s*), but the form is more probably *pl̥t.no-*.

l̥ > lā, āl:

   *pl̥m-: Gaul. *lāma-*, Ir. *lám*, W *llaw* 'hand', Lat. *palma*, OHG *folma*
   'palm of hand'.

   *ql̥-: Gaul. *Cāll-eva*, Ir. *caill* 'wood', W *celli*, OCorn. *kelli* 'grove',
   Lat. *callis*.

r̥̄ > rā, ār:

   *bhr̥̄-tu- (< *bh.rə-tu-): Gaul. βρᾱτουδε 'ex judicio', Ir. *bráth*, W
   brawd 'judgment'.   OCS shows the full grade in *bĭrati* 'take'.

   *kr̥̄u̯o-: Gaul. *cārvo-*, W *carw*, Corn. *carow*, Bret. *karo* 'deer', Pol.
   karw, OPruss. *curwis*, Lat. *cervus* 'stag'.

   *r̥̄dh-u̯o- (< *r.dh-u̯o-): Gaul. *ārdu-* (cf. *Arduenna*), Ir. *ard*, W
   ardd- 'high', Lat. *arduus* 'steep', Skt. *urdhvá-* 'tending upward,
   elevated'.

m̥̄ > mā (?):

   No certain example is found.   Perhaps Gaul. *Leuci-māl-acos*
   (epithet of Mars) is one; cf. W *mawl*, Bret. *meuli* 'praise', Gk.
   μέλπω 'sing', μολπή 'song'.[23]

n̥̄ > nā:

   *gn̥̄tó- (< *g.nətó-): Gaul. *gnātus* (cf. *Cintu-gnātus* 'first-born'), Lat.
   nātus, etc.

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[22] Brugmann, Gdr.² 1.412.

[23] Suggestion of Professor Gray, who says that Gaul. *mālo-* might be explained
as from *m̥.lo-,   This *m̥.* (also *m̥o*, *.m̥*, *.m̥*) represents what used to be considered *m̥̄*.

INDO-EUROPEAN *s*

IE	Gaulish	Irish	Welsh
s-	*s-*	*s-*	*h-*
-s-	*-s-*	–	–

s- > *s-*:

*seno-: Gaul. *seno-* (cf. *Seno-gnātus*), Ir. *sen*, W *hen* 'old', Lat. *sen-ex*, etc.

*sento-: Gaul. *sento-*, Ir. *sét*, W *hynt* 'way', Goth. *sinþs* 'path, way', OHG *sind* 'path'.

Initial *s* also remains before a consonant:

*smeru-: Gaul. *Smertullus*, Ir. *smiur*, W *mer* 'marrow', OHG *smero* 'fat', NHG *schmieren*.

*slougo-: Gaul. *Catu-slugi*, Ir. *slúag*, W *llu* 'army', OBulg. *sluga* 'servant'.

-s- > *-s-*:

*ĝhaiso-: Gaul. *gaesum* 'spear', *Gaesati* (name of people or band), Ir. *gái*, *gáe*, W *gwaew*, *gwayw* (< *goew*), OHG *ger* 'spear'.

One example of IE *z* > Gaul. *s* may be seen in the name *Tasgius*, OIr. *Tadc*. NIr. *Tadhg*. IE *z* is also to be assumed in *ex-* (cf. *Ex-obnus* 'fearless'), Gk. ἐξ, Lat. *ex*, etc. The other Celtic equivalents are OIr. *ess-*, W *eh*.

THE SEMI-VOWELS

IE	Gaulish	Irish	Welsh
i̯	*i*	–	*i*
u̯	*v*	*f*, etc.	*gw-*, *-w-*

i̯ > *i*:

*i̯uu̯n̥kó-: Gaul. *Iovincillus*, Ir. *óac*, Lat. *iuvencus*, Goth. *juggs* 'young'.

*i̯ugo-: Gaul. *iugo-* (cf. *Ver-iugo-dumnus*), W *iau*, OCorn. *ieu* 'yoke', Lat. *jugum*, Goth. *juk* 'yoke'.

u̯ > *v*:

*u̯ēro-: Gaul. *vīro-* (cf. *Co-viros*), Ir. *fír*, W *gwir* 'true', Lat. *vērus*, G *wahr*.

*neu̯os-: Gaul. *nevio-*, *novio-* (cf. *Nevio-dunum*, *Novio-dunum*), OIr. *nu(a)e*, *nuie*, W *newydd* 'new', Lat. *novus*, Goth. *niujis* 'new'.

But Gaulish *v* ultimately disappeared, cf. *Ioincatius* beside *Iouin-catus*. The process was evidently *i̯ou̯* > *i̯ō*. This is comparable to the development seen in Ir. *óac*.

The Short Vowels

IE	Gaulish	Irish	Welsh
a	*a*	*a*	*a*
e	*e*	*e*, etc.	*e*, etc.
i	*i*	varies	varies
o	*o*	*o*, etc.	*o*, etc.
u	*u*	*o*	*o, u*
ə	*a*	varies	varies

a > *a*:

ḱat-: Gaul. *catu-* (cf. *Catu-rīges*, *Catumaros*), Ir. *cath*, W *cat, cad* 'battle', OHG *hadu-* in *Hadu-brand*, etc.

e > *e*:

qʷetuor-: Gaul. *petvar-*, Ir. *cethir*, W *pedwar* 'four', Lat. *quattuor*.

seno-: Gaul. *seno-* (cf. *Seno-gnātus*), Ir. *sen*, W *hen* 'old', Lat. *sen-ex*, etc.

But *e* > *i* before *n* + consonant: *pinpetos* 'fifth'.

i > *i*:

u̯idu-: Gaul. *vidu-* (cf. *Vidu-casses*), Ir. *fid*, W *gwydd* 'tree', OHG *witu* 'wood'.

bhilo-: Gaul. *Bil-* in proper names, Ir. *bil* 'good', OHG *bil-luh* 'suitable, seemly'.

o > *o*:

qorio-: Gaul. *corio-* (cf. *Corio-vallum*), Ir. *cuire* 'band, host', Goth. *harjis* 'army'.

qob-: Gaul. *cob-* (cf. *Ver-cobius*), Ir. *cob* 'victory', Eng. *hap*, OIcel. *happ* 'lucky deed', OCS *kobĭ* 'augurium'.

orbho-: Gaul. *orbio-* (cf. *Orbius*), OIr. *orb(b)e*, *orpe* 'heir', *comarbe* 'Miterbe', Lat. *orbus* 'orphan', Goth. *arbi* 'inheritance'.

u > *u*:

dub-nó-: Gaul. *dubno-, dumno-* (cf. *Dubnorix*), Ir. *domun* 'world', W *dwfn* 'deep, depth', Lith. *dubùs* 'deep'.

su-: Gaul. *su-* (cf. *Su-carus*), Ir. *su-*, W *hy-* (cf. *hy-gar* 'amiable'), Skt. *su-*, Avest. *hu-* 'good'.

ə > *a*:

ǵhlə-: Gaul. *glano-* (cf. *Glana, Glanis*), Ir., W, Bret. *glan* 'clean, pure', ultimately related to Goth. *gulþs*, etc.

prə-ti-: Gaul. *ratis* 'fern', Ir. *raith*, W *rhedyn*, Bret. *raden* 'fern', with redupl. Lith. *papártis*, Serb. *päprat* 'fern'.

The Long Vowels

IE	Gaulish	Irish	Welsh
ā	ā	ā	aw
ē	ī	ī	ī
ī	ī	ī	ī
ō	ā	ā	aw
ū	ū	ū	u, ī

ā > ā:

*qāro-: Gaul. cāranto- (cf. Cārantus, Cārantillus), OIr. car(a)e, gen. carat, W car, pl. ceraint 'friend', Lat. cārus, Goth. hōrs.

*māter-: Gaul. mātrebo dat. pl., Ir. máthir, Lat. māter, OHG muoter.

ē > ī:

*u̯ēro-: Gaul. vīro- (cf. Co-vīros), Ir. fír, W gwīr 'true', Lat. vērus, G. wahr.

*rēĝ-: Gaul. Rīgo-, Rīo-, Ir. rí, oblique cases ríg 'king', Lat. rēx, rēgis.

ī > ī:

*līu̯o: Gaul. Līvius, Ir. lí, W llīw, Bret. liou 'color', Lat. līveō līvor.

*nīt-: Gaul. nītio- (cf. Nītio-briges), Ir. níth 'battle', Goth. neiþ 'envy, hatred', OHG nīd 'battle rage'.

ō > ā:

*mō-: Gaul. māros 'great', Ir. már, mór, W mawr 'great', Gk. -μωρος; OHG -mār from the ē-grade.

*gnō-tós-: Gaul. Catu-gnātos, Epo-so-gnātus, OIr. gnáth 'well-known', W gnawd 'usual, customary', Lat. nōtus, Gk. γνωτός 'known'.

ū > ū:

*dūn-: Gaul. dūnum 'citadel, town', Ir. dún 'citadel', W dīnas 'city, fortress', OIcel. tún 'fenced-in place', NHG Zaun 'fence'.

The Diphthongs

IE	Gaulish	Irish	Welsh
ai	ai, ae	ai, ae	ai, oe
ei	ī	ī, ia	i
oi	oi	ōi, ōe	u
au	au	ō, ua	u
eu	eu	ō, ua	u
ou	ou	ō, ua	u

ai > ai, ae:

> **aidh-*: Gaul. *Aedui*, Ir. *aed* 'fire', W *aidd* 'zeal, ardor', Lat. *aedēs*
> originally 'domestic hearth', Gk. *αἶθος* 'shine, sheen', Skt. *ḗdha-ḥ*
> 'kindling wood'.

> *k̂aito-*: Gaul. *καιτο-*, *ceto-*, indicating ultimate monophthongization
> (cf. *καιτοβριξ*, *Cētobriga*), W *coed* 'tree, wood', Goth. *haiþi*
> 'heath, plain', NHG *Heide*.

ei > ī:

> *trei-*: Gaul. *trī-*, Ir. *trí*, *tri*, W *trī* 'three', Lat. *trēs*, Goth. *þreis*
> 'three'.

oi > oi:

> *oino-*: Gaul. *oino-* (cf. *Oinus*), Ir. *óen*, *oín*, W *un* 'one', OLat.
> *oinos*, Goth. *ains* 'one'.

au > au:

> *au-*: Gaul. *Su-ausi-a* 'having beautiful ears', OIr. *ó*, *áu* 'ear', Lat.
> *auris*, Lith. *ausìs*, Lett. *àuss*, Goth. *ausō* 'ear'.

ou > ou:

> *roudh-*: Gaul. *Roudus*, Ir. *ruad*, W *rhudd* 'red', Goth. *rauþs*, Lat.
> *ruber* 'red'.[24]

eu > eu:

> *teuto-*: Gaul. *teuto-* (a dialectal alternation occurs between *eu* and
> *ou*), Ir. *túath*, W *tud* 'people', Goth. *þiuda* 'people'.

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[24] *ou* seems to have become in Gaulish *au*; whether in every position or not is not clear. IE *lou̯-* gives Gaul. *lautro* 'balneo', Ir. *loathar*, *lóthor* 'trough', Lat. *lavō*, etc.

THE RUSSIAN GENDER CATEGORIES

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[The paper formulates a technique for the analysis of morphological and syntactic phenomena, by means of which the Russian noun categories of declension, class, and gender are established and their mutual relationships described.]

1. This paper is the first of a group of studies analyzing the noun categories associated with gender in the various Slavic languages. As Russian presents a particularly clear-cut set of categories, it is judged most suitable for presentation first, and for general discussion.[1]

The phenomena considered are the subject of much attention in the current grammars, and in general the classifications made here are described more or less adequately. But the methods of analysis are vaguely stated and inconsistently followed, while historical considerations and the classical grammar of the schoolbooks succeed in masking or distorting the proper relations of categories to each other. This statement implies that better analyses are available; the contribution of this study to Slavic linguistics lies precisely in the method of analysis and the perspective of succession in which it presents the categories.

2.1. We are concerned with those parts of linguistic analysis usually treated under the terms morphology and syntax. It is well known that drawing an exact line between these two fields is not easy, and no satisfactory definitions of their respective provinces exist. I propose three techniques of analysis which can be used to cover the whole of the material; the subdivisions arrived at may not correspond exactly to any conventional subdivisions, but that is not important, for it will be seen that the delimitations here proposed are not haphazard but precise.

2.2. In the examination of the forms of a language as found in large bodies of text, it will appear without difficulty that some are more

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[1] This discussion is based on my own knowledge of Russian and on A. A. Šaxmatov, Očerk sovremennogo russkogo literaturnogo äzyka³ [Sketch of the contemporary Russian literary language], Moscow, 1934. Presentation of the material before the Yale Linguistic Club, and preceding and subsequent discussions with colleagues, have been useful in clearing up a number of points.

similar than others. It will further become apparent on investigation that a form X will be replaced by somewhat similar forms X′, X″, etc., under varying conditions, and that a form Y will in like manner be accompanied by forms Y′, Y″, etc.

We shall call the technique of finding the related forms X, X′, X″, ..., Y, Y′, Y″, ..., SERIATION, and define it thus: seriation establishes categories by the examination of the sets of related forms created by the modification of a base form by some element which changes it. The element of change may be something added to the base (before, after, within the base), or may be recognizable only by the fact that one of the component parts of the base is changed. The sets of forms or SERIES may be called paradigms. Paradigms may be of several orders of abstraction; that is, there may be paradigms of paradigms, and so on.

On the basis of the paradigms of which they form parts, all the non-phonological forms of a language may be classified into certain groups. But this classification does not tell us all we want to know about them. For instance, in English we can set up a class of nouns and a class of verbs. But while all nouns (with a few irregular exceptions) have the same declensional paradigms (possessive and plural in -s, -z, -ez), not all nouns are the same in the rest of their behavior. This other behavior becomes apparent when we examine the arrangements of these forms in relation to each other or to others. Arrangements are examined by two techniques: COLLOCATION and CONGRUENCE. Collocation establishes categories by stating the elements with which the element being studied enters into possible combinations (SELECTION, JUXTAPOSITION). Thus in English we can say *much milk*, but not *many milks*; on the other hand *much chair* is impossible, while *many chairs* occurs. The classes of nouns which may be arrived at by this means indicate something about the behavior of nouns not ascertainable merely by seriation. The other kind of arrangement, congruence, establishes categories by examining the elements which can be substituted for a given element (SUBSTITUTION) and those which refer to it (AGREEMENT). In English the relations between *man* and *he*, *woman* and *she*, *house* and *it*, are congruential.

We now have our techniques. Examination of the morphemes of a language and their classification by seriation is what is usually called morphology. The rest is syntax. The syntax of, for instance, Latin case forms, is arrived at by collocation. The syntax of English genders, or of Latin genders for that matter, is arrived at by congruence.

2.3. We proceed to an examination of the forms of Russian by means of the techniques described.

It may be stated first that by seriation we determine the 'parts of speech' or word-classes of Russian to be nouns, adjectives, pronouns, verbs—all inflected (that is, entering into paradigms)—, and particles (non-inflected). The nouns are of various kinds, and it is with nominal categories only that we are concerned. The different series (paradigms) will give us one kind of classification, the collocational and congruential classes others.

All examples are in a phonemic orthography, not in the usual spelling.

3.1. Russian nouns fall into three declensional classes, according to the type of paradigm. These we shall call simply declensions I, II, and III.

Declension I has two main subtypes, A—the nouns whose name form ends in a consonant, and B—those that end in stressed *-ó*, or unstressed *-a < -o* and *-i < -e*. Subclass A may be exemplified by *stól* 'table', which has the forms *stalá, stalú, stal‚é, stalóm, stalí, stalóv, stalám, staláx, stalám‚i.* If the final consonant is one of a class called palatals, as in *dožd‚* 'rain', then a form in *-óv* would not exist, but a form *dožd‚éj* would be found; however, if the final consonant is *j* (following a vowel), as in *kráj* 'edge', then the *-óv* form is found. Further subdivisions of class A are formed by nouns which retain the loud stress on the stem syllable, so that the case-forms which when accented have the vowels *e, o* in the termination have these vowels replaced when unaccented respectively by *i, a,* as in *stúl‚i, stúlam* from *stúl* 'chair'. Still further subclasses consist of nouns having a form in *-u* instead of or beside the one in *-a,* and a form in *-ú* in addition to that in *-é;* of nouns having forms in *-á* or *-já* instead of in *-i;* and several other small classes. There are also four nouns with special forms in *-i: bóži < bóγ* 'god', *ótči < at‚éc* 'father', *xr‚ís‚t‚i < xr‚istós* 'Christ', *góspad‚i < gaspód‚* 'lord'.

Subclass B may be illustrated by *s‚iló* 'village': *s‚ilá, s‚ilú, s‚il‚é, s‚ilóm, s‚óla, s‚ól, s‚ólam, s‚ólax, s‚ólam‚i.* Here too there are several subdivisions according to whether the name form is in *-ó, -a, -i,* or *-jó.*

Declension II consists of nouns ending in *-á, -a,* and is illustrated by the forms *daská* 'board', *daskú, daskí, daské, daskój, dóski, dósk, dóskam, dóskax, dóskam‚i.* Unstressed terminations have *i, a* instead of stressed *e, o.*

Declension III consists of nouns ending in a palatal consonant, and has several subclasses. The most common is exemplified by *kós‚t‚* 'bone': *kós‚t‚i, kós‚t‚ju, kas‚t‚éj, kas‚t‚ám, kas‚t‚áx, kas‚t‚m‚i.* One

noun has a form in -*óm* instead of the one in -*ju*—*put,óm* from *pút,* 'path'. Two nouns, *mát,* 'mother' and *dóč* 'daughter', have the stems *mat,ir-*, *dočir-* everywhere except in the name form. A set of nouns in -*i* have -*n*- stems: *ím,i* 'name', *im,in,i*, *im,in,im*, *im,iná*, *im,ón*, *im,inám*, *im,ináx*, *im,inám,i*. One noun, *d,it,á* 'child', has also the stems *d,it,át-*, *d,et-*: *d,it,át,i*, *d,it,át,im*, *d,ét,i*, *d,it,éj*, *d,ét,am*, *d,ét,ax*, *d,it,m,í*.

These classes are determined entirely by formal criteria. When examined for the kinds of words in them, we see that there are names of persons, animals, and things in each declension, and that the meanings have no direct connection with the form.

3.2. It will have been noticed that the number of forms is not the same in all the declensional classes, and this means that in some instances one form does duty for functions that are fulfilled elsewhere by two or more forms. In declension I there are usually ten forms in all classes, but a few subclasses have more; in II there are always ten forms; in III there are eight forms.

It is now necessary to inspect the collocations of the various forms to see what their functions are. On doing so we discover first that declensions I and II divide their forms into two equal sets of five, and that declension III has five forms corresponding to one of these two sets, but only three corresponding to the other. This is the division into singular and plural: five forms always in the plural, three or five in the singular.

When we examine the uses of the singular forms, we find, however, that there are at least six, and that in both declensions I and II one of the forms must do duty for two functions, but the allocation is not the same. To condense the discussion, we can use the conventional case names, and point out that in a word like *stól* the cases are: nominative *stól*, genitive *stalá*, dative *stalú*, locative *stal,é*, instrumental *stalóm*. A word like *daská* has genitive *daskí*, dative and locative both *daské*, instrumental *daskój*, and a special form, the accusative, *daskú*. In collocations where *daskú* would appear we would have *stól*. That is, in declension IA the accusative is like the nominative, while in declension II the dative and locative are alike. In declension IB the accusative and nominative are alike. In declension III the same is true; further, in declension III all nouns have a single form for the genitive, dative, and locative, but a separate instrumental.

Some nouns of IA, like *sáxar* 'sugar', have a special partitive form, *sáxaru*, different from the genitive. Others, like *l,és* 'forest', have a special inessive, *l,isú*, different from the locative. The four nouns

'god', 'father', 'Christ', 'lord', have a special vocative—the form in -*i* already mentioned, while all other nouns use the nominative as a vocative.

In the plurals of all declensions, the five forms are nominative-accusative, genitive, dative, locative, instrumental; the declensions show great similarity of form in the plural.

On further examination of the collocations of nouns of all three classes, we discover the following phenomenon: a noun like *vór* 'thief' uses as its accusative not this nominative form, but the form *vóra*, which is the genitive. Further, in the plural the accusative also is not *varí*, the nominative, but *varóv*, the genitive. A word like *vólk* 'wolf' also has accusative equal to genitive in both singular and plural (*vólka*, *vólkav*). In class IB there are only a few rare examples of this phenomenon (cf. Šaxmatov 124).

In declension II, in the singular the nominative, accusative, and genitive are always different, but in the plural we find that some words, such as *žiná* 'wife', have the accusative equal to the genitive, *žón*, instead of the nominative, *žóni*; another example is *stárasta* 'elder of a village', accusative-genitive plural *stárast*. Declension II also includes proper names like *mʲixájla* 'Michael' (popular and hypochoristic for *mʲixajíl*), which usually have no plural, but have accusative equal to genitive on the rare occasions when used in the plural.

In declension III we find that in the singular the nominative and accusative are always the same, but in the plural there are instances of accusative equalling genitive. Such are *lóšadʲ* 'horse', nominative plural *lóšadʲi*, accusative-genitive plural *lašadʲéj*; *mátʲ* and *dóč*, nominative plural *mátʲirʲi*, *dóčirʲi*, accusative-genitive *matʲirʲéj*, *dačirʲéj*. None of the -*n*- stems show this phenomenon, but the isolated *dʲitʲá* has nominative plural *dʲétʲi*, accusative-genitive *dʲitʲéj*.

The foregoing examination shows us that the paradigms of nouns are of two types, which bear no relation to the declensional subclasses, but are determined entirely by behavior in collocation (selection). We set up then two classes of nouns, which, following current practice, we shall call ANIMATE and INANIMATE. Animates are all nouns which in the plural have the accusative equal to the genitive. Inanimates are those nouns that in the plural have the accusative equal to the nominative. The singulars are less consistent: animates of declension I have accusative equal to genitive, those of declension II have a separate accusative form, while all others have the accusative equal to the nominative;

inanimate singulars have a separate accusative in declension II, and elsewhere the accusative equals the nominative.

The nouns of class IA having partitives in -*u* and inessives in -*ú* are all inanimates, and the small classes thus set up do not concern us here. The four words with special vocatives are a small closed subclass of animates referring to divinity; *atˌéc* as a common noun, 'father', has no special vocative.

At this point we must look into the kinds of meanings that are present in the two classes. It is found that all words denoting human beings and animals are animate; but there are also a few words of declension I which are animate, having the accusative singular and plural equal to the genitive, but do not denote animals or persons: these are instrument nouns in -*átˌilˌ*, -*itˌilˌ*, as *znamˌinátˌilˌ* 'denominator', *mnažítˌilˌ* 'multiplier', *dˌilˌítˌilˌ* 'divisor', etc. It is easy enough to explain this exception: most nouns in these suffixes are agent nouns, and those that are not have been assimilated to them. But the fact that this is so shows that the animate–inanimate category is now no longer a meaning category (if it was one to begin with), but is a category based on purely formal behavior (the equivalence of accusative plural to genitive plural for animate, to nominative plural for inanimate); and the terms used for the two classes are arbitrary grammatical designations like any other.

3.3. The next step is to examine the congruences of nouns in Russian. We find that there are three forms of the nominative singular of the personal pronoun of the third person: *ón, aná, anó*. Animate nouns may be replaced by any one of the three, and the same is true of inanimates. Those nouns that take *ón* are accompanied by adjectives having the nominative singular in -*aj* or -*ój*, those that take *aná* have adjectives in -*aja* or -*ája*, and those that take *anó* have adjectives in -*aja* or -*ója*; the two forms -*aja* belong to different declensional series. The three classes thus established are the genders: masculine, *ón* 'he'; feminine, *aná* 'she'; neuter, *anó* 'it'. They are not in any sense based on meaning, but are purely congruential classes.

Masculine nouns are those of declension I ending in a consonant, those in the augmentative and pejorative suffixes -*íška, -íšči, -énka* derived from originals that are masculine, and a few names of animals ending in -*kó*; also masculine are those nouns of declension II denoting a male person or a person more likely to be male than female (as *slugá* 'servitor, body servant'); one noun of declension III, *pútˌ* 'path', is masculine. Feminine are all nouns of declension III ending in a conso-

nant (except *pútⱼ*), and all nouns of declension II which are not masculine. Neuter are all nouns of declension I in *-ó*, *-a*, *-i*, and the *-n*-stems in declension III. It is clear that while there is a certain correspondence between declension and gender, it is by no means complete.

4.1. The Russian noun categories may be summed up in the following table:

Genders	Noun-Classes	
	Animate (acc. pl. = gen. pl.)	Inanimate (acc. pl. = nom. pl.)
Masculine	Decl. I. acc. sg. = gen. sg. II. special acc. sg. III. none	Decl. I. acc. sg. = nom. sg. II. none III. acc. sg. = nom. sg.
Feminine	Decl. I. none II. special acc. sg. III. acc. sg. = nom. sg.	Decl. I. none II. special acc. sg. III. acc. sg. = nom. sg.
Neuter	Decl. I. none II. none III. acc. sg. = nom. sg.	Decl. I. acc. sg. = nom. sg. II. none III. acc. sg. = nom. sg.

In this table seriation—the discovery of paradigms—has given us only the declensional classes, but has told us nothing of the noun-classes or genders. By the use of collocation we get the noun-classes, animate and inanimate. It should be noted that it is the usage in the plural that gives a consistent definition of the classes: the fact that some nouns have accusative equal to genitive in the singular (I, animate), and that others have a special accusative singular (II, animate and inanimate) is not decisive; it is the fact that in the plural nominative and accusative animate are never alike that establishes the two classes. But neither the declension nor the noun-class tell us definitely about the further subdivision of nouns into genders, though they do give us some idea; it is necessary to apply the test of congruence before that category comes out clearly. The three techniques establish three sets of categories, independent of each other, and not depending on meaning.

4.2. There are further subdivisions of Russian nouns based on congruence, which may be briefly mentioned here. The interrogative and relative pronoun *któ* 'who' is used only in congruence with nouns denoting persons; *štó* 'what' is used of animals and things. The numerals *dvója*, *trója*, *čétvⱼirⱥ* 'two, three, four' (literally, 'a twosome, a threesome, a foursome') are used only with masculine personal nouns,

while all other nouns take *dvá* masculine and neuter, *dvⱼé* feminine, *trⱼí*, *čitírⱼi*. The personal–non-personal division based on *któ* and *štó* is seen to be founded entirely on meaning, but it is not reflected elsewhere in the language, except in a rather irregular way: personals include the masculines in -*a* of declension II, all masculines of nationality and status in -*in*, plural -*i* (*anglⱼičánⱼin*, *anglⱼičánⱼi* 'Englishman, -men'), and masculines having certain irregular types of nominative plural endings; but there are also other masculine nouns which are personal, and the feminine personals have no formal identifying marks beyond the congruence, except that the two -*r*- stems of declension III (*mátⱼ, dóč*) belong here. The division into masculine personals and all other nouns, established by the use of the numerals, is more nearly based on paradigms, since the unidentifiable feminines are excluded from the special class; the class also includes the one neuter animate personal, *dⱼitⱼá* 'child' (*dvója dⱼitⱼéj* 'two children').

4.3. It may be pointed out that there has been a certain tendency in Russian to make the several kinds of categories—declensional class, noun-class, and gender—coincide, and this coincidence is closest between declension and gender. But in no instance is it complete.

It should be noted also that the current terminology which speaks of the animate–inanimate division as forming subclasses of the masculine and feminine genders is wrong. These noun-classes are independent categories intersecting with genders. Further, I know of no previous mention anywhere that *dⱼitⱼá* is animate, so that the animate–inanimate division is found in all three genders.

Finally, I would emphasize again that the terms used are simply conventional ones, which are justified in part by the meanings of the words in the several classes. But it would really be preferable to have other, entirely arbitrary and non-committal words, to prevent misunderstanding and the kind of approach from meaning which is found in the traditional grammars.

ON DEFINING *mahogany*

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[Only on the basis of a large collection of actually occurring examples is it possible to set up a precise and adequate definition of *mahogany* (or any similar word), as it is used in present-day colloquial American English. The definition so arrived at is contrasted with a typical dictionary definition based on secondary sources.]

The meaning or meanings of a word are determined by usage. That is to say, if we want to know what a word means, we must find out by studying concrete cases in which the word is actually used by speakers and writers. The objective scientific investigator of the meaning of a word must, in practice, depend chiefly on written material. One's memory of past conversations is notoriously unreliable, and the practical difficulties involved in taking conversations down verbatim make it needful to fall back on printed matter as the chief source for the concrete cases which must be studied. Luckily there is available for study a vast mass of printed material, and this material yields an abundance of concrete cases in which the word under study occurs. Indeed, a word in general use (like *mahogany*) occurs in print so often that the investigator is overwhelmed by the abundance of his material, unless he limits himself to a selection: he can study only a small proportion of the total number of occurrences of the word under investigation. Thus, the word *mahogany* must have appeared in print several million times during the present century alone, and no investigator or group of investigators could find the time or the money needed to study all these occurrences of the word. This difficulty is a familiar one in scientific research. The method of investigation used in such cases is that of sampling at random. One collects, at random, as many concrete cases as one can handle, and then proceeds to study the cases that have been collected, making the assumption that the cases collected are representative of the whole body of pertinent material. This is a reasonably safe assumption if the number of samples collected is large and if the samples have been taken from a great variety of sources. When I undertook the present investigation, I set for myself as a goal the collection of about

1000 passages in which the word *mahogany* appeared; I considered that this would give me a body of material large enough to make a sound basis for a scientifically accurate definition of the word. In fact, since I was aided by a small group of paid helpers, I have in my files some 1500 passages. These passages have come for the most part from newspapers and popular magazines (see footnote 1). They represent current American usage. I have made no attempt to investigate British, South African, or Australian current usage, but all available information leads me to think that those parts of the English-speaking world use the word *mahogany* very much as we do, namely, as a generic term, applied to many woods.

Nearly all definitions of *mahogany* earlier than my own are those made by editors of dictionaries. Of these dictionary definitions, it may be said with certainty that they are based on collections much smaller than my file of passages. Indeed, in most cases the dictionary makers cannot and do not claim that their definitions are based on primary evidence, that is to say, on collections such as mine. Most dictionaries are made in a less scientific manner, and this for the very good reason that a rigorously scientific procedure would cost too much. There are some 500,000 words in the English language. If 1000 passages were collected for each word, the total number of passages would come to 500,000,000, and the task of copying, filing, classifying and studying 500,000,000 quotations would involve prohibitive expense. Most makers of dictionaries therefore rely chiefly on the labors of their predecessors in framing their definitions. In other words, they depend chiefly on secondary, not primary sources of information. The greatest of English dictionaries, the so-called Oxford, is based on collections of quotations, not on secondary sources, but these collections were made possible by heavy subsidies, and could not have been gathered if the work had been undertaken as a commercial proposition. Even so, only about 5,000,000 quotations were gathered, or an average of 10 quotations per word. In the Dictionary of American English now under way at the University of Chicago, the number of quotations on hand for the word *mahogany* is 45; the editors have very kindly sent me copies of these 45 quotations, and I have made use of them in my study of the meaning of the word. It will be seen, however, that my own collections give me some 30 times as much material to work on as is available to the editors of the Dictionary of American English. It does not follow, of course, that my definition will be 30 times as accurate as that of the dictionary makers. But the relative fulness of my material obviously gives me a great ad-

vantage in making a definition which shall be objective and authorita-
tive.   In particular, I have been able to distinguish between the degrees
of frequency of the various meanings with an accuracy impossible
heretofore.   It is of great importance to know which meanings of
mahogany are common, usual, and which meanings are uncommon, un-
usual.   But without a large collection of examples, the frequencies of
the various meanings cannot be determined; they can only be guessed at.
My collections have given me a sound statistical basis for determining
frequencies; previous investigators, since they had small collections of
examples or no collections at all, could come to no conclusions as regards
frequencies, and therefore were compelled to list the various meanings
of *mahogany* without regard to their relative frequency of occurrence.
The order which the dictionary makers adopted was based not on fre-
quency but on chronology.   Instead of putting the most common
meaning first, they put the oldest meaning first.   This procedure is of
course quite proper in a historical dictionary, that is, a dictionary which
traces the history of a word from the time of its first occurrence, say,
1000 years ago, down to the present day.   The Oxford is a historical
dictionary, and as such it follows, quite properly, the chronological
principle in arranging its definitions.   Thus, it gives 14 different mean-
ings for the adjective *nice*; of these, the ordinary current meaning comes
last in the list, because this meaning did not develop until the 18th
century.   In a dictionary of current English, however, the ordinary
meaning of a word ought to come first, and unusual meanings ought to
be put down at the bottom of the list.   Some dictionaries try to do
this, but in so doing they are greatly handicapped by lack of accurate
statistical information as to relative frequencies of occurrence of the
various meanings, and most dictionaries, even if primarily devoted to
current speech, take the easiest way out and order their definitions
chronologically.   For this procedure one cannot blame them too se-
verely, in view of the expense involved in getting at the facts of usage.
One can blame them, however, or some of them, for using ambiguous
terms.   I refer particularly to the terms *primary* and *secondary* as
applied not to evidence but to the meanings of words.   When a lexi-
cographer speaks of the primary meaning of a word he means merely
that this meaning is the first in point of time, that is, the oldest meaning.
Thus, the primary meaning of *nice* is 'stupid, foolish.'   But the ordinary
man quite naturally thinks that the lexicographer means by *primary*
something else altogether, namely, the chief or principal meaning of the
word so marked.   In fact, of course, the primary meaning, as the

lexicographer understands it, is often no longer current at all, as in the case of *nice*. And if the primary meaning happens to be still current, not infrequently it has become a rare or relatively unimportant meaning. In other words, the term *primary*, although the lexicographer may use it in perfectly good faith, gives the layman a wrong impression, and should therefore be avoided by the expert, as should its companion term *secondary*.

Let me illustrate the weaknesses of the lexicographers by taking up the definitions of *mahogany* given in the latest edition (1934) of the New International Dictionary, commonly known as Webster's. It gives seven meanings of *mahogany*, as follows:

1. The valuable hardwood of a tree, the traditional mahogany (sense 2), used extensively for furniture and cabinetwork. It varies in color from a deep reddish brown to brownish yellow, and is susceptible of a high polish.

2. A tropical American tree (Swietenia mahagoni), largely confined to the West Indies, yielding mahogany (sense 1).

3. Any of several trees of continental tropical America of the genus Swietenia, as S. macrophylla etc.; also, their wood.

4. Any of many trees related to, or resembling, the mahogany, as, in Australia, species of Eucalyptus; in India, various trees of the genera Soymida, Chukrasia and Toona; in Africa, Khaya ivorensis and related species of African mahogany; in the Philippines, various trees (see Philippine Mahogany); in California, the mountain mahogany. See African Mahogany, Bastard Mahogany, etc.

5. With *the* or a possessive, a table of mahogany; hence, a dining table. *Colloq.*

6. A mixture of brandy and water; also, in Cornwall, one of gin and treacle. *Chiefly slang.*

7. The average color of mahogany wood, reddish red-yellow in hue, of medium saturation and low brilliance. Called also *acajou*, *laurel oak*, *mahogany brown*, *mahogany red*. Cf. *color*.

This group of definitions gives every indication of careful, conscientious study. If nevertheless we get from it a false picture of current (or indeed of past) usage, the explanation is evident: the editor responsible for this particular entry made little use of primary sources of information, namely, documents which exemplify everyday, ordinary English speech. He relied almost wholly, it would seem, on documents of a very different kind, that is, earlier editions of his own and other dictionaries, treatises on dendrology and the like. Such secondary sources of information are not to be scorned, of course. They have great value as controls, and may even give a certain amount of information not otherwise to be had. But they cannot take the place of primary evidence. The English language, like every other living language, is

democratic in its form of government. The meaning of a word in general use, like *mahogany*, is determined, not by pundits, still less by official action of any kind, but by the people. It is the duty of the professional linguist to find out, by investigation, what the usage of the people is, in this particular matter, and to record his findings. This cannot be done by resort to botanical treatises. The investigator must go straight to the primary source of information.

The first criticism to be made of the Webster definition is a very serious criticism indeed. This definition, by the terms in which it is cast, excludes the generic sense of *mahogany*, although the word is ordinarily used as a generic, not as a specific name. A man who uses *mahogany* in Webster's sense 1 has in mind the wood of Swietenia mahagoni; a man who uses it in sense 3 has in mind the wood of Swietenia macrophylla or some species of Swietenia other than Swietenia mahagoni. But what of the man who speaks of mahogany wood without having in mind any particular botanical species or genus? Webster's ignores this use of the word *mahogany*, although it is by far the most common. Webster's sense 1 and sense 3 both occur, but they are both extremely rare, and this for the very simple reason that if a man is thinking of some particular kind of mahogany he will qualify the word accordingly: thus, he will speak of Cuban or Mexican or Philippine mahogany. The word *mahogany*, used without qualification, regularly has a generic sense, and does not specify the origin or the botanical classification of the wood. Sometimes, it is true, *mahogany* appears without formal qualification but nevertheless with a specific rather than a generic meaning. Thus, if Cuban mahogany is the subject of conversation, and the fact that it is the Cuban variety is clearly understood, the qualifying term *Cuban* becomes superfluous and may be dropped. In such cases *mahogany* is obviously an abbreviation, and the qualifying word is understood even though not expressed. It makes little or no practical difference whether the qualification is formal or merely contextual. But, in the absence of qualification, *mahogany* is a generic term in current speech, and the failure of Webster's to recognize it as such shows clearly enough that the Webster definition was framed with little regard to the facts of ordinary English usage.

The Webster definition not only fails to include the generic sense of *mahogany*; it also fails to bring out how the various specific senses of the word are expressed. Thus, Webster's sense 1, in ordinary English usage (but not in this dictionary), is indicated by one of the following qualifiers: West Indian, Spanish, San Domingo (or Dominican), Cuban,

Jamaican. Only in botanical treatises and in dictionaries have I found this sense marked by the use of Swietenia mahagoni as a qualifier. In other words, current popular speech uses geographical, not botanical qualifiers. The reason for this is obvious: the general public knows little and cares less about the botanical classification of the various kinds of mahogany wood, but it is interested in the place of origin of the wood, and associates specific kinds of mahogany with specific places of origin. It must be added that Webster's refers the reader to three other entries in the dictionary, namely, *African Mahogany*, *Bastard Mahogany*, and *Philippine Mahogany*, and by its *etc.* implies that still more entries exist in which specific kinds of mahogany are defined, but the system by which the generic term is made specific in ordinary speech is nowhere explained, and only a few of the specific names are actually entered in the dictionary. Further weaknesses of the Webster definition might be mentioned, but what I have said will be enough to show that this definition cannot hold water.

Without further preamble I will now give my own definition of the word *mahogany* in current American speech:[1]

1. A more or less hard and heavy wood derived from various related and unrelated tropical trees; the wood usually has interlocked or crossed grain, varies in color between reddish brown and brownish yellow, seasons well, and takes a high polish; it is much used for fine cabinet work and in making other articles of luxury or superior quality, as yachts and fine furniture.

Note: this sense occurs in about 70 per cent of the quotations collected.

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[1] In preparing this definition various secondary sources of information were consulted: a number of dictionaries, a few botanical works like G. B. Sudworth's Nomenclature of the Arborescent Flora of the United States, A. Koehler's Identification of True Mahogany ... , and Sudworth and Mell's Colombian Mahogany; also encyclopaedia articles. My definition of *mahogany*, however, is based on primary sources, except as indicated in the definition itself. I have profited greatly by my study of C. D. Mell's Biography of the Word *Mahogany*, but have relied on my own collections in drawing up my definition. The quotations collected from publications of the twentieth century have been taken from the following sources: (a) newspapers—New York Times, San Francisco Chronicle, and Los Angeles Times; (b) popular and trade journals—House Beautiful, Ladies' Home Journal, Family Circle, Asia, National Geographic Magazine, Motor Boating, American Lumberman, Wood Products, Popular Homecraft, Hardwood Record, Southern Lumberman, Veneers and Plywoods, New York Trade Lumber Journal; and (c) novels—Winston Churchill's Crisis and David Garnett's Pocahontas. For the usage of earlier centuries I have relied chiefly on the 45 quotations kindly supplied to me by the editors of the Dict. of American English (this dictionary is restricted to the 17th, 18th, and 19th centuries), but I have been able to add a few early quotations of my own finding.

2. A particular variety of this wood; the variety meant is usually indicated by prefixing the name of its place of origin, as *African mahogany, Philippine mahogany, West Indian mahogany.*

Notes: (a) This sense occurs in about 18 per cent of the quotations collected. (b) West Indian mahogany is sometimes referred to (chiefly in dictionaries and botanical treatises) as true or genuine mahogany, since the tree from which it is derived bears the scientific name *Swietenia mahagoni*, and some dendrologists apply the same adjectives to mahogany wood derived from other species of Swietenia; in ordinary speech, however, these adjectives are used in a different sense, namely, as the opposite of *imitation*; thus, a piece of furniture is said to be genuine mahogany if made of mahogany wood (whatever the variety), while it is said to be imitation mahogany if made of some other wood colored or treated so as to look like mahogany. (c) The varieties specified in the quotations collected are listed below, together with the botanical names (if known) of the trees from which they are derived:

real, true or *genuine mahogany* (16 quotations), Swietenia (??)
Spanish mahogany (3 quotations), Swietenia mahagoni
San Domingo mahogany (9 quotations), Swietenia mahagoni
Cuban mahogany (12 quotations), Swietenia mahagoni
Jamaican mahogany (1 quotation), Swietenia mahagoni
West Indian mahogany (2 quotations), Swietenia mahagoni
Mexican mahogany (12 quotations), Swietenia
Tabasco (Mex.) *mahogany* (2 quotations), Swietenia
Honduras mahogany (34 quotations), Swietenia macrophylla
Nicaragua mahogany (5 quotations), Swietenia macrophylla
Costa Rica mahogany (5 quotations), Swietenia macrophylla (?)
Panama mahogany (4 quotations), Swietenia macrophylla (?)
Central American mahogany (4 quotations), Swietenia macrophylla (?)
South American mahogany (2 quotations), ??
Colombia mahogany (3 quotations), Cariniana pyriformis
Peruvian mahogany (3 quotations), ??
Brazilian mahogany (3 quotations), Carapa guianensis (crabwood)
Tropical American mahogany (1 quotation), ??
Philippine mahogany (75 quotations), Shorea (3 species)
African mahogany (54 quotations), usually Khaya (several species)
Liberville mahogany (1 quotation), Boswellia klaincana
White mahogany (6 quotations), Tabebuia donnell-smithii (primavera).

3. A color, so named because it approximates the average color of mahogany wood.
Note: this sense occurs in about 10 per cent of the quotations collected.

4. A tree that yields mahogany wood.
Note: this sense occurs in about 1 per cent of the quotations collected.

5. Furniture made of mahogany; specifically, a dining-table.
Note: this sense occurs in about 1 per cent of the quotations collected.

6. Any of several non-tropical trees native to the United States, as the coffee-tree (Gymnocladus dioicus), the sweet birch (Betula lenta), and the mountain mahogany (Cercocarpus ledifolius and parvifolius).

Note: this sense does not occur in the quotations collected, and as a current sense it is known to me from secondary sources only. It seems to be a local, not a national use, and, except for the mountain mahogany, seems to be on the wane, if not indeed on the verge of obsolescence. The application of the name *mahogany* to the coffeetree goes back to the 18th century; its application to the sweet birch goes back with certainty to the early 19th century, and in all likelihood to the 18th century.

7. A kind of strong drink, so called from its color.
Note: this sense is known to me from secondary sources only.

8. Salt beef.
Note: this (slang) sense is known to me from secondary sources only.

EXAMPLES OF SENSE 1

I.C.C. today authorized railroads to increase freight rates on mahogany and other fine foreign woods 10 per cent.—New York Times, 12/11/38, Sec. III, p. 3.

The interest in the beauty of the grain of woods that seems to be a development of recent years is doubtless one reason why mahogany in fine furniture today is receiving high appreciation. The accidents of growth give parts of some logs a beautiful marking as "figure."—Ibid., 1/1/28, Sec. V, p. 13.

The server may be most effectively made of either walnut or mahogany. ... When the article is made of either walnut or mahogany, the craftsman should remember that such woods are employed primarily to introduce some degree of sophistication.—Popular Homecraft 9.99 (July–Aug. 1938).

To insure stiffness the boat is double-planked with mahogany.—Motor Boating 24.20 (Dec. 1920).

A grandfather clock ... in solid mahogany case.—Los Angeles Times, 11/27/38, Part VII, p. 5.

Wax is especially suited for oak, mahogany and walnut and will give any wood the appearance of an antique finish.—Ladies' Home Journal, Sept. 1927, p. 150.

EXAMPLES OF SENSE 2

Since the introduction of bright finished runabouts, the use of all mahogany woods in boatbuilding has been increased. There are numerous varieties of mahogany woods. The principal ones are Honduras, African and Philippine.—Motor Boating 57.282 (Feb. 1936).

The bunks, shelves, motor box, toilet room partitions and lockers will be made from ½-inch material. Mahogany of the Philippine variety is about the best wood for this purpose.—Ibid. 53.110 (June 1934).

West Indian mahogany—this is the hardest, heaviest and closest textured of all the mahoganies and is susceptible of a finer finish. The size of the timber is much smaller than the African, Central American and Mexican mahoganies.—Ibid., Feb. 1930, p. 478.

Today Colombia is selling to the United States such exports as ... mahogany.—National Geographic Magazine 17.707 (Dec. 1906).

Examples of sense 3

Frieze Broadloom (rugs) ... choice of 10 colors ... champagne beige, mahogany, light maple ... —Los Angeles Times, 9/5/38, Part I, pp. 12-13.

Solid birch, finished in mahogany color.—New York Times, 8/22/27, Sec. I, p. 19.

Henderson's Tulips—all the tulip colors—rose, purple, ... mahogany.—Ibid., 10/30/38, Sec. II, p. 12.

Examples of sense 4

A branch of the Rio Congo, Republic of Panama, is called Mahogany Creek because of its great number of mahogany trees.—Southern Lumberman, 1/15/39, p. 31, col. 3.

The mahogany and cedar are imposing trees.—National Geographic Magazine 19.486 (July 1908).

As I climbed, I found the trees in colonies—first, eucalyptus and the fragrant yellow acacia; higher, the koa or Hawaiian mahogany.—Asia 25.931 (Nov. 1925).

Examples of sense 5

Historic mahogany—buy reproductions from a store that has been selling fine furniture for 98 years.—New York Times, 10/14/38, p. 9.

And when tables were set in the bar itself—alongside the brass-railed monumental mahogany backed by its mirrors and flanked by the free lunch counters on the other side—these tables were for gentlemen.—Ibid., 6/11/33, Sec. VI, p. 12.

Young Barker swore he wouldn't put his feet under the same mahogany with such a very contemptible scoundrel.—Bret Harte, Luck of Roaring Camp and other Sketches 134 (1871).

Examples of sense 6

I have lately received several seeds from Kentucky, supposed to be of this tree, where it is said to grow plenty, and is called the coffee or mahogany tree.— H. Marshall, American Grove 56 (1785).

Sweet birch ... or mahogany birch.—H. Muhlenberg, Cat. Plants 88 (1813).

In North America several small trees of the genus Cercocarpus ... , with very hard, fine-grained, reddish wood, are called mountain mahogany. ... The small-leaf mountain mahogany (C. parviflorus) is a common shrub of the chaparral (q.v.) throughout the Sierra Nevada and Coast ranges of California. The dry wood of the trunk is so extremely dense that it is difficult to drive ordinary nails into it, whence the name hard tack given to this shrub by mountaineers. —Encyclopaedia Britannica 14.680.

Mahogany. ... The name has been extended with various specific epithets, to one or more species of several genera of trees, such as Betula, Gymnocladus,

Persea, Cercocarpus, Catalpa and Rhus.—W. R. Gerard, in Garden and Forest 9.282 (1896).

Our investigation has shown that in current usage *mahogany* is a generic term, applied to the wood of many trees. How far back can we trace this generic sense of the word? The quotation of 1896, the last quotation given above, implies that once upon a time *mahogany* was not a generic but rather a specific term, a name which has been 'extended' from one species to another. The evidence, however, indicates that in popular use *mahogany* has always had a generic sense, and has from an early date been applied not so much to particular species of trees as to wood (whatever its origin or botanical classification) that exhibits certain general characteristics (defined above in my sense 1). The evidence for this is clear enough in the 19th century and the latter part of the 18th, as Clayton D. Mell, the well known dendrologist, has brought out in his important paper, Biography of the Word *Mahogany* (first printed serially in The Timberman of Oct., Nov., and Dec. 1930). The evidence from the 17th and early 18th centuries is too scanty to warrant any positive conclusions. The word first appears in print in 1671, in John Ogilvy's Account of America. Here it is the name given to a 'curious and rich' wood of the island of Jamaica. The earliest mention of a tree yielding mahogany wood dates from the year 1731, that is, 60 years later. This tree was first described in 1743; from the description it seems clear that the tree in question was the Swietenia mahagoni of modern botanists. In the 18th century, then, if not earlier, this species of Swietenia might be called mahogany (whence the botanical name *mahagoni* coined for it in 1759). Then as now, however, this particular tree might be (and was) called by other names as well, while other trees, some related and some not related to Swietenia mahagoni, might be (and were) called mahogany. More important still (since *mahogany* means first of all a wood rather than a tree), woods derived from various trees were marketed in the 18th century as mahogany. This has continued to be the case ever since, as everybody knows; in other words, *mahogany* from early times to the present day has regularly been a generic term. It therefore seems plausible to presume that it was a generic term in origin.

Unluckily this presumption cannot be either proved or disproved, as the etymology of *mahogany* has never been determined, and probably never will be, for want of evidence. Nevertheless, we do have a piece of evidence which points to a very definite etymological meaning for the word *mahogany*. From the earliest times of which we have record down

to the present day, mahogany has been called not *mahogany* but *madeira* in the Bahamas.   This word *madeira* is generally recognized to be nothing more than the Spanish *madera* 'wood', somewhat unorthodox in spelling and pronunciation.   Why did the early Spanish settlers call mahogany by such a general name?   I suggest that *madera* is merely a translation of a native term *mahogany* and that this native term meant simply 'wood'.   On the Bahama islands mahogany was THE wood par excellence, and for that reason it would be natural enough for the natives to refer to it by means of a generic term.   The same cannot be said of the Spaniards, however, and their use of *madera* 'wood' is most readily explained on the hypothesis that in so doing they were simply following the example set by the natives.   Although this hypothesis cannot be proved (since the native dialect has not survived), it has the merit of accounting for the facts, and in my opinion deserves serious consideration.

PHONETIC METHOD IN HURRIAN ORTHOGRAPHY

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[Doubled consonant symbols in Hurrian syllabic writing indicate two different qualities: in certain cases voicelessness (as in Hittite), in other cases actual length. See the summary at the end of the article.]

It is known that Hurrian orthography parallels the Hittite in confusing the voiced and voiceless stops of Akkadian.[1] It is also a fact that such confusion does not justify the earlier assumption that Hurrian had only one set of stops, presumably voiceless;[2] for the Hurrian alphabetic texts from Ras Shamra (Ugarit) show the stops differentiated according to voice.[3] We are forced thus to the conclusion that Hurrian recognized more than one set of stops, in common with Akkadian, but that the respective sets were patterned differently; consequently, the Akkadian representation of stops could not be applied to reflect inner-Hurrian phonetic relations.

The nature of the Hurrian stop-pattern is suggested by an observation of J. Friedrich[4] and the supplementary remarks of C. G. v. Brandenstein.[5] To use the phraseology of these scholars, the Hurrian alphabetic texts present the tenues initially while the mediae occur only in

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[1] See M. Berkooz, The Nuzi Dialect of Akkadian (NDA) 23 f. (Lang. Diss. 23, 1937). Strictly speaking, this statement applies primarily to the middle of the second millennium and subsequent centuries. Akkadian orthography itself reflects adjustments of the underlying Sumerian script. The Hurrian syllabary, too, presupposes older paleographic forms and phonetic conditions, since it antedates clearly the First Dynasty of Babylon; cf. Speiser, JAOS 58.189, note 68 (1938). It should be stressed that the Hurrian texts from Mâri, which date back to the period of the first Dynasty, approximate the Babylonian rather than the later Hurrian orthography; for the Mâri texts see F. Thureau-Dangin's publication in Revue d'Assyriologie (RA) 36.1-28 (1939).

[2] Berkooz, NDA 40 f.

[3] J. Friedrich, Analecta Orientalia 12.128 ff. (1935); cf. also Thureau-Dangin, Syria 12.252 (1931).

[4] Loc. cit. 130 f.

[5] ZDMG 91.574 (1937).

medial and final positions; but a doubled media is expressed by the corresponding tenuis: e.g. *tθb* 'Teshub', but *at* = syllabic *adda* 'father'. This formulation is corroborated by recently published alphabetic fragments of Hurrian texts.[6] It is clear, therefore, that Hurrian *p:b* *k:g t:d* were phonetic, but non-phonemic, positional variants, the voiced reflexes occurring after vowels.[7] We have an analogous relation in Old Irish and Canaanite between stops and their corresponding spirants.

Hurrian syllabic texts, especially those in the chancellery orthography of the Mitanni Letter, are better witnesses of the underlying phonology than has been supposed hitherto. They show that the Hurrians indicated in their writing phonemic distinctions for which the Sumero-Akkadian parent script had not provided; they did this systematically and consistently. This method was extended to the representation of sounds other than stops. The basic principle was to distinguish two sets of phonemes by means of single and double writing respectively, single for voiced sounds and double for the voiceless. E. H. Sturtevant has demonstrated that the Hittites employed the same method for their language.[8] We shall see that the Hurrians employed it more extensively and with greater uniformity. Moreover, we can follow the successive steps which led the Hurrians to the application of this particular scheme. Inasmuch as this scheme is the result of inner-Hurrian phonetic conditions, it is inherently probable that the Hittites owed to the Hurrians the use of single and double writing for contrasted phonemes.

The evidence is considerable even if proper names are virtually eliminated. Out of the material which I have collected I can cite here only a few examples for the representation of each given sound. Special attention will be given, however, to exceptions, apparent or as yet unexplained. I shall concentrate in the main on grammatical elements in preference to lexical matter and shall draw most of my examples from the Mitanni Letter,[9] which contains the bulk of extant Hurrian contextual material. The evidence of the alphabetic sources, all too scanty at this writing, will provide for each sound the necessary starting point and will be used as a check of ultimate results, wherever possible.

[6] Syria 20.127 (1939).

[7] This does not preclude the presence of etymological voiced stops as wholly unrelated phonemes; cf. pp. 333-4.

[8] A Comparative Grammar of the Hittite Language (1933) 74 ff.

[9] Latest transliteration by Friedrich, Kleinasiatische Sprachdenkmäler (1932) 9-32. Unless specifically stated, the citations from the Mitanni Letter given below follow Friedrich's transliteration. No volume is mentioned in such cases.

I. š : šš

This pair affords a convenient start because it involves individual phonemes and has no connection with non-phonemic positional variants. Syllabic š is represented alphabetically by two symbols which will be transcribed here as θ and ž respectively.[10]   Graphically, θ has the same basic symbol as the interdental Semitic spirant [ṯ], and ž is a modification of the Semitic [š]-symbol. The approximate phonetic value of θ has to be determined on circumstantial evidence. It was not [s] because that sound is represented by a special symbol. Since Ras Shamra s and syllabic s show the same relative frequency, the two representations may safely be identified. For similar reasons we may connect syllabic z with Ras Shamra z. It follows that θ was closer to [ṯ] than to any other phoneme reflected in the Ras Shamra alphabet. About ž we know that the syllabary writes this sound with š-signs, occasionally also as z;[11] it was perhaps a voiced counterpart of [š],[12] i.e., [ž].

In order to show that the syllabary knew how to distinguish between

[10] These transcriptions are intended primarily as graphic symbols and not as phonetic representations.

[11] Cf. JAOS 58.192, where I used, however, z̧ for ž following Z. Harris, JAOS 55.95 ff. (1935). Harris's judicious statement leaves a choice between affricate and sibilant, and these alternatives are still attractive. I now transcribe this symbol as ž (with H. L. Ginsberg and B. Maisler, JPOS 14.243 ff. [1934]) in order to stress the correspondence of this character with syllabic -š-.

[12] The phonetic values of θ and ž are very difficult to determine. All that the new evidence from orthography presupposes (see below) is that their syllabic representations (-šš-:-š-) indicate voice and voicelessness respectively. It is suggestive, however, that Semitic [ṯ] actually became [š] in Akkadian as well as Canaanite. If these two changes were related phonetically, an intermediate [s] has to be assumed in both instances; but there is no historical evidence whatsoever which would favor such an assumption. The alternative would be to regard the two changes as independent, the Akkadian shift to be ascribed to Sumerian, and the Canaanite to Hurrian influence.

If this theory is right, Hurrian θ/-šš- was not an interdental spirant, like [ṯ], but some other sound patterned more closely with [š]. Egyptian transliterations are ambiguous, unfortunately, on this moot point. To be sure, Hurrian θ is treated apparently like Semitic [š]; cf. Ti-su-pi (for Teshub/tθb), W. F. Albright, The Vocalization of the Egyptian Syllabic Orthography (1934) 56. But this is inconclusive inasmuch as Egyptian had no symbol for [ṯ], since the Egyptian character transcribed as ṱ is taken to represent a 'palatalized' [č], not the spirant [ṯ]; cf. Albright, op. cit. 26, n. 97. Accordingly, Egyptian ṱ was not a proper equivalent of the Hurrian sound under discussion.

In these circumstances, it is best to leave open the question of the phonetic value of θ/-šš- and ž/-š-. The one thing that is certain is that the sounds reflected by these writings were by far more common in Hurrian than any other phonemes for which the syllabary employed sibilant-signs.

the two sounds which are represented alphabetically as θ and $\check{z}$ respectively, we begin with a few examples of established alphabetic-syllabic correspondences.

θ: $\theta u\theta k$ (RŠ XX[13] B 8) = $^d\check{S}a$-$u\check{s}$-ka- (III 98) 'Ishtar'

$t\theta b\theta$ (RŠ XX B 10, 11) = ^dTe-e-$e\check{s}$-$\check{s}u$-pa-$a\check{s}$ (I 76; II 65; IV 118) 'Teshub'

$\check{z}$: $ar\check{z}$- (RŠ X[14] 4.16 ff.; XX B 7, 15) = a-ru-u-u-$\check{s}a$ (I 46; cf. also II 87; III 2, 11; IV 34 '$\sqrt{}$give'

$\hbar\check{z}l\check{z}$ (RŠ X 4.1 ff.) = $\hbar a$-a-$\check{s}u$-li-e-$e\check{s}$[15] (KUB XXIX 8 iii 22, 24, 39 '$\sqrt{}$hear'.

We see from these instances that θ appears between vowels as -$\check{s}\check{s}$-, elsewhere as $\check{s}$; but $\check{z} = \check{s}$ (written single) in any position. This observation must now be subjected to a thorough check. If -$\check{s}\check{s}$- is used consistently in one group of forms and words, while -$\check{s}$- is restricted with equal consistency to another group, the equations

$$\text{-}\check{s}\check{s}\text{-} = \theta \text{ and -}\check{s}\text{-} = \check{z}$$

will have to regarded as laws of the Hurrian syllabic orthography.

As a matter of fact, the application of the above principle to distinguish two separate phonemes for which $\check{s}$-signs are employed, by means of double and single writing, with the single form used for the voiced sound, proves to be general and uniform. Thus other occurrences of the name Teshub are written regularly with double -$\check{s}\check{s}$-.[16] Moreover, the second θ of $t\theta b\theta$, which represents the element of the logical subject in Hurrian, appears regularly as -$\check{s}\check{s}$- when the addition of another enclitic element has placed the case-ending in intervocalic position. This ending is easily recognized in a number of words, e.g.: proper names, such as

^1Gi-li-ia-$a\check{s}$-$\check{s}a$-a-an I 83; ^1Ma-ni-$e\check{s}$-$\check{s}a$-a-an IV 27, the pronouns

i-$\check{s}a$-$a\check{s}$-$\check{s}a$-a-an 'I'[17] I 69; we-e-$e\check{s}$-$\check{s}a$-a-an 'thou' III 68;

[13] I use this abbreviation for Syria 20.127 (1939).

[14] Syria 10, pl. LXIV (1929).

[15] Brandenstein, ZDMG 91.559.

[16] Cf. also I 24; II 77. Note also the compund ^1Ar-te-e-$e\check{s}$-$\check{s}u$-pa- IV 36. But the double -$\check{s}\check{s}$- is not yet found in the Mâri texts, where the orthography follows Babylonian usage (cf. RA 36.6 f.); in the proper names from Nuzi we find both single and double $\check{s}$, the underlying principle of orthography being here of a different kind (see JAOS 58.192).

[17] The form in -$\check{s}$ marks the logical subject with transitives plus direct object. Grammatically, the $\check{s}$-case is best regarded as the 'agentive'; cf. Speiser, JAOS 59.308 (1939). For an unrecognized n-form of this pronoun cf. $i\check{s}$-te-e-en II 71.

ag-gu-uš-ša-a-an 'this one' (opp. of 'that one, the other') IV 123, and nouns, like

še-e-ni-iw-wu-uš-ša-a-an II 12, 103; III 1, 13, 24, 49; IV 56, 59, 108;
še-e-ni-iw-wu-uš-ša-ma-a-an II 58, 100; IV 47 'my brother'.

But when the vowel of the enclitic is short, the suffix *š* is written single:

še-e-ni-iw-wə-ša-an IV 14,[18] 57;
še-e-na-wə-ša-an I 84 'thy brother'.

In these instances the symbol *wə* must be regarded as vowelless, so that the *š* of the following *-šan* (not *-šān*) is no longer intervocalic. It is possible that the short vowel induces or reflects different accentual conditions.[19]

No less consistent is the representation of *ž* by a single *š*. Thus all the extant occurrences of *haš* 'hear', which is contained also in the alphabetic writing *ḫžlž*, show only one *-š-;* the following few examples will serve as illustrations:

ḫa-ši-en I 113; II 13; III [40, 42,] 49,
ḫa-šu-u-ša IV [6, 9,] 89 [92].

It is significant that the second *š* of *ḫašaš*, the reduplicated form of *ḫaš*, is also written single:

ḫa-ša-a-ši-wa-a-en IV 20, [23, 26, 29,] 110 [KUB XXIX 8 iii 30].[20]

In Ras Shamra *arž-* we recognize the preterit element *-uš-* added to *ar* 'give'. In the Mitanni Letter alone I have noted some fifty examples of this formative, all with one *-š-*. This uniformity speaks for itself.

This orthographic law can now be applied automatically to all the other intervocalic occurrences of *-šš-* and *-š-* for which direct alphabetic-syllabic correspondences are lacking. The results will aid, incidentally, in the further study of the language by allowing us to separate the various *š*-formatives according to the two phonemes involved; interesting conclusions are obtained also for individual words.

θ = *-šš-*:

Here belong, in addition to (a) the *š*-case which was reviewed above, (b) the substantivizing and abstract element *-šše* (pl. *-ššena*), to which may be related (c) the verbal suffix *-ašš-;* furthermore, (d) the possessive pronominal suffix of the first person plural *-iwwaš*, and (e) individual words with *-šš-*. E.g.:

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[18] This one example cannot be regarded with certainty as being in the *š*-case, owing to the obscure character of the verbal form *ta-a-na-aš-du-en* with which it is associated syntactically.

[19] For analogous instances see below, p. 336.

[20] These citations are meant to be representative, not exhaustive.

(b) *ta-a-nu-ša-a-aš-še* II 99; *ú-na-aš-še-na* II 116, together with some thirty other clear instances in the Mitanni Letter. Examples with *-ú-uš-še/u-* should perhaps be classified in the same group; cf. *a-a-lum-pu-ú-uš-še* II 91; *ú-ri-im-pu-ú-uš-šu-uḫ-ḫa-* III 95. A possible exception is *na-ak-ka-še* III 103, as against *na-ak-ka-aš-ša* III 106. Do we have here simply a scribal error?

(c) Cf. *ta-a-nu-u-ša-a-aš-ša* IV 7; note also II 22, 91; III 13, 90, 92; IV 90, 106.

(d) Cf. *u-u-mi-i-ni-iw-wa-aš-ša-a-an* III 109; *i-i-ri-i-in-iw-wa-aš-ša-a-[an]* III 123.

(e) Here belong in the first place the various forms and derivatives of *pašš* 'send'. E.g.:

pa-aš-ši-en IV 52, 54, 57, and many other forms of this verb;

pa-aš-ši-i-it-ḫi 'envoy' II 14; IV 35; other forms passim;

pa-aš-ši-ḫi-iw-wə 'my shipment' III 54, 57.

Not once is this common stem written in the Mitanni Letter with one -š-. Hence the apparently similar *pa-a-ši* KUB XXIX 8 iv 24, *pa-a-ša-na-e* ibid. iii 14 must represent a different stem, which may be found also in RŠ X 4.8 *pžy* and ibid. 36 *pžlθ*.[21] From among the other words one has to single out

tiš-ša-an 'very' I 18, 26, and passim; contrast *ti-ša* 'heart'.

ž = -š-:

In this group we find, in addition to (a) the preterit formative *-uš* which was listed above, (b) the plural suffix *(-na)-šuš* (first *š*), which corresponds to the *š*-case of the singular; (c) the pronominal suffix *-iaše/a*; (d) the 'dimensional' suffix *-ša*; (e) the element *-ša-* in the imperative plural of intransitives; and (f) individual words with *-š-*. E.g.:

(b) This suffix appears as *-na-šu-uš*, except when the noun is determined by a possessive pronoun, in which case *-na-* is omitted;[22] cf.:

e-e-en-na-šu-uš 'the gods' II 52; IV 117; [KUB XXIX 8 iii 37];

iw-ri-en-na-šu-uš 'the lords' III 48; KUB loc. cit.; but

iw-ri-iw-wə-šu-uš 'our lords' IV 118. Out of the numerous other examples of this suffix from Boghazköi I have noted one with double -šš-: *pa-a-pa-an-na-aš-šu-uš* KUB XXVII 38 iii 2, alongside the same

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[21] This last form recalls *pa-ša-la-a-e* KUB XXIX 8 iii 14. But the form *pa-ši-ib* of the Mâri texts (RA 36 No. 4. 3, 6) is ambiguous (see above, note 16).

[22] See now Thureau-Dangin, RA 36.99.

form with one -š- ibid. ii 19.   A glance at the text will show that this exceptional writing could be due to dittography.[23]

This (-na)šuš should not be confused with (-na)-a-še/u which seems to express comparison; cf. I 54; III 44, 60.

(c) Cf. ni-ḫa-a-ri-a-a-še III 45; ši-ni-a-še-na- III 40.   The latter example, with the plural -na following -še-, differs plainly from the other -na-a-še (b), where -na- precedes -še.

(d) This element is used primarily for 'in' and 'from'.   It follows the plural -na and may be followed, in turn, by the adverbial -a-e.   Cf.:

u-u-mi-i-in-na-(a-)ša II 96; III 73; iw-ri-en-na-a-ša III 72;
enna-(a-)ša KUB XXIX 8 iii 54; iv 26;[24] ta-a-ar-ra-ša[25] (pl.) III 122;
ni-i-ru-ša-e I 55, 58, 70, 82; IV 38; tar-šu-wa-na-ša-a-e KUB XXIX
     8 iii 16.

(e) [i]t-ta-i-šal-la-a-an IV 52; pal-la-i-šal-la-ma-an IV 65.

(f) In addition to ḫaš 'hear', we find here such common words as ta-še- 'present' I 85, 88, 90; ti-ša- 'heart' I 78, 107, etc.; e-e-ši- 'heaven' II 11; III 16, 30, 100; IV 125.

Conclusion: There is abundant evidence that syllabic -š- corresponds to alphabetic ž and syllabic -šš- to alphabetic θ.[26]   The connection between θ and Semitic ṯ and the fact that šš/θ is never expressed by z-signs[27] prove that the double writing indicates here a voiceless sound. Conversely, ž represents a voiced sound because it may be expressed

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[23] The stroke which represents aš is in this instance flush with the first horizontal stroke in šu.

[24] Another possible interpretation of -na-ša is as dat.-loc. pl., according to a kind communication from Prof. A. Goetze.

[25] For *tari-na-ša, according to the principle established by J. Friedrich in his Kleine Beiträge zur churritischen Grammatik (1939), Mitt. d. Vorderas.-Aeg. Ges. 42.6 (1939); see also below, p. 337.

[26] It may be noted in passing that before -š- only u may represent the back vowel, not ú.   On the other hand, ú is found before sounds written double, such as -tt- and -ll- when these consonants represent initial sounds of enclitic pronouns with the š-ending assimilated.   Consequently, the restoration še-e-ni-iw-wu-ú-š[a-a-a]n I 9 (cf. also II 83, 84) is immediately suspect, and these doubts are confirmed by the association of these restored words with verbal forms which do not take the š-case (cf. JAOS 59.309 ff.).   Moreover, the preserved traces preclude double š, which we should expect in this element when occurring between vowels. On the other hand, the text admits of -r[a as well as -š[a, and the comitative suffix -ra happens to take a preceding ú, as is evidenced by šu-ú-ú-ra 'with me' II 93.   Thus we are led to the correct restoration of breaks in the text by the application of the orthographic principles established above.

[27] Cf. JAOS 58.192.

by *z* as well as the normal *š* in the Hurro-Akkadian syllabary of Nuzi.[28]
The contrast reflected in *š* : *šš*, therefore, was one of voice as against
voicelessness.

II. *w* : *ww*; *p/b* : *pp/bb*

With the symbols for labials the situation is complicated by the
presence of the above four types of syllabic representation, twice as
many as with the *š*-signs. Additional distinctions are introduced
through the use of the *ú*-sign, which is found not only in all diphthong
positions but also after the digraph *ww*. The alphabetic sources present
w, *b*, and *p*; they show also that intervocalic *w* may interchange with *u*.
The combined material suggests thus at least three individual phonemes
for this group, probably more.[29] In the following review it will be best
to begin with the syllabic material. The examples cited represent a
small proportion of the collected total.

w. The single writing is found:

(a) Initially, in words like *wər* 'know' I 72; II 98, etc.

(b) Medially, in words like *a-a-wə-ru-e-ni-e-ra* 'with the earth' III 101;
e-wi-ir-ni 'the lord, king' IV 128; *ti-we-e-(e-)na* 'the words, things' I
73, 99, 108, etc. Furthermore, in several grammatical elements: (1)
The genitive suffix *-wə*: (*e-*)*e-ni-i-wə* 'god's' I 87, 105; *šu-u-(u)wə* 'mine'
III 99, 115; *we-e-wə* 'thine' III 55, 58. (2) The possessive pronominal
suffix of the second person sing. *-w* (interchanging with *-b/p*), when
another enclitic element follows: *pa[-aš-š]i-i-it-ḫi-wu-ú-ta* 'to thy envoy'
I 53; *at-ta-i-wu-uš* 'thy father' (in the *š-case*) III 67.   (3) The infixed
negating element *-wa-* with verbs:[30] *ḫi-su-ú-ḫi-wa-a-en* III 76, 85, 89, 95
'let him not offend'; *ḫa-ša-a-ši-wa-a-en* IV 20, 110 'let him not listen'.
(4) The modal suffix *-ewə*:[31] *ka-ti-li-e-wə* IV 18; *ḫi-il-lu-li-e-wə* IV 24, 45.

(c) Finally, in the possessive pronominal suffix *-w/b* 'thine' (see above,
b2) when no other element follows: *pa-aš-ši-i-it-ḫi-iw/b* I 59, 114; II 95.

ww. The double writing occurs with two forms:

(a) The very common possessive pronominal suffix of the first person
-iwwə (sing.; pl. *-iwwaš*, see above):[32] *še-e-ni-iw-wə* 'my brother' I 18,

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[28] Ibid.

[29] See the section on 'Labials' in JAOS 58.194 ff.   The present account amplifies
and supersedes the earlier study.   Cf. also F. Thureau-Dangin, Syria 12.253.

[30] Cf. Friedrich, Kl. Beitr. z. churr. Gramm. 37 f.

[31] Speiser, JAOS 59.309 ff.   This element may be preceded by the formative
-u/il- (whose function remains to be determined), in which case *-u/ilewə* is the
result.

[32] Pp. 323–4.

49, 65, etc. (also with numerous elements following this formative);
ti-wi-iw-wə 'my word, request' III 75.

(b) In the cluster resulting from the negating verbal infix *-wa-* and
the diphthong *-a-ú* which marks the first person as the agent with
transitive verbs; the product is *-uw-wə*:[33] *ta-a-nu-ši-uw-wə* II 113; *ḫi-su-
ú-ḫu-ši-uw-wə* IV 33; *ku-zu-u-ši-uw-wə-la-an* IV 46; *ú-ú-ri-uw-wu-un-
na-a-an* IV 56. Here may belong also certain forms in *-iw-wə*, e.g.,
wə-ri-iw-wə II 94; *ki-i-pa-aš-ši-iw-wə* II 114.

p (medially also *-b-*). This writing occurs:

(a) Initially, in several common words, e.g.: *pašš* 'send' I 50, 65, etc.;
pis 'be glad' I 79 f., etc.

(b) Medially, (1) in words like *gi-pa-a-nu/e-* 'send' II 16, 63, etc.;
du-ru-pi 'trouble' I 15, 17; III 111 ff.; *papa/enna* 'the mountains', cf.
ZDMG 91 (1937) 568 f. (2) In the possessive pronominal suffix of the
second person *-b/p* (varying with *-w*): *ša-a-la-pa-an* 'thy daughter' I 51;
IV 93; *še-e-na-pa-an* 'thy brother' I 91. (3) In the adverbial formative
pat(a)e: *ni-i-ru-pa-a-ta-e* 'promptly' IV 5, 6; *pal-tu-pa-a-te* 'justly(?)'
III 48.

(c) In final position *-b/p* cannot be distinguished from *-w*.

pp. This double writing may be

(1) Etymological: Cf. the Hurrian verbal stem *tuppu*, as in *tup-pu-
u-un-ni* II 87; *tup-pu-uk-ku* III 45; *tup-pu-li-e-wə* III 100; the Akkadian
loanword with *-pp-*: *tup-pè* 'tablet' II 88 f.; III 36 ff.; or

(b) Morphological, when a formative with an initial labial is added
to a form which ends in a labial; such constructions are: (1) *še-e-na-a-
ap-pè* 'of thy brother' I 89; *ᵈTe-e-eš-šu-u-up-pè* 'of Teshub' II 77; *at-ta-
i-ip-pè-ni-e-tan* '(more) than that of my father' III 69. In these ex-
amples we have the genitive suffix *-wə* added to a stem ending in *b*
(*Teššub*), or to a word with the possessive pronominal suffix *-w/b*.
(2) *at-ta-i-ip-pa* 'for thy father' III 52, 58. Here the particle *-wa* 'for'
is added to *attaiw/b* 'thy father'.

ú. This writing represents a semivowel in forms like *a-gu-ú-a* 'to the
other' I 81, since we recognize here the same suffix *-wa* which we found
in *attaippa* (above). It is probable that a semivowel is to be assumed

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[33] Cf. Friedrich, op. cit. 37. This particular form represents, therefore, two
distinct labial phonemes; we shall see that the first was voiced, while the other
was probably voiceless in view of the apparent connection between the verbal
suffix *-a-ú* and the possessive suffix *-iwwə* (where the labial is invariably written
double). The result appears as *-uwwə*, and the *u* remains even after *-i* (at least
in writing).

also in (1) *ú-a-du-ra-an-* I 65, II 15; III 68 f.; (2) *a-ú-a-a-ar-ḫé-na-* IV 8; and (3) the verbal suffix *-a-ú*, as in *ta-a-na-ú* 'done (present) by me' II 92, etc., and *gu-lu-ša-ú* 'said (past) by me' II 56, etc. This suffix seems to correspond to the possessive *-iwwə* 'mine' with nouns.[34]

Highly significant is the use of *ú* after the possessive element of the first person *-iwwə*: e.g., (1) *še-e-ni-iw-wə-ú-e* II 57; III 21, 110; IV 32 ff.; *e-ti-iw-wə-ú-e* IV 5, 18, 22; and (2) *še-e-ni-iw-wə-ú-a* I 102, 107; III 14, 20, 62, 102; *am-ma-ti-iw-wə-ú-a* III 67; *at-ta-iw-wə-ú-a* III 68. A check of the respective contexts in which these and similar forms occur shows that we have in (1) the genitive suffix *-wə* added to the possessive *-iwwə*, while (2) contains the particle *-wa* with the same possessive element. The analogy of similar combinations with the possessive suffix of the second person *-w/b* is immediately apparent: *at-ta-iw-wə-ú-a* 'for my father' : *at-ta-i-ip-pa* 'for thy father'. It follows that *-iw-wə* represents in such cases one syllable *-iww*. When actual gemination has taken place owing to the presence of another contiguous labial, the result is expressed by *-iw-wə-ú-*. Double *-ww-*, when not followed by consonantal *-ú-*, reflects, therefore, a simple phoneme. Once again double writing serves a phonemic purpose; in this case it is employed to distinguish the labial in the element for 'my' from the heterogeneous labial in 'thy'.

Alphabetic correspondences will help to determine the nature of the differences implied by the syllabic sources.

Ras Shamra	Syllabic
(1) *awr-n-* RŠ X 4.4	= *a-a-wə-ru-e-ni-e-* III 101
(2) *pbn-* ibid. 30, 60	= *papa/enna* ZDMG 91.568
tθbθ RŠ XX B 10 f.	= ᵈ*Te-e-eš-šu-pa-aš* I 76; II 65; IV 118
(3) *ḥmrbn* RŠ X 4.60	= *Ḫu-u-ma-ri-bi-ni* ZDMG 91.568
(4) *atynpθ/d* ibid. 3, 4	cf. *e-en-ni-iw-wa-a-še-e-en* II 77
(5) *iržp-* ibid. 42	= ᵈ*Iršabbi* Analecta Orientalia 12.129

We see from (1) that both groups agree on *w*. Intervocalic *b* of Ras Shamra is expressed by syllabic *p* or *b* (2–3); also by *w*, since *-bi-* in (3) represents the genitive *-wə* of the Mitanni Letter. Alphabetic *-p-* corresponds to syllabic *bb/pp* (5). It reflects also syllabic *ww*, since *atynpθ/d* (4) have to be normalized as **attai(a)niwwuš* (*š* = *θ*) and **attai(a)-niwwəta* respectively. For the plural element *na* before possessive suffixes (where it becomes *ni*, as assumed above) cf. ᵈ*e-en-ni-iw-wa-a-še-e-en* 'of our gods' II 77, and *e-e-en-ni-ip-tan* 'for thy gods' IV 116 (in both examples **eni + na > enni-* is certain). The semivowel *-y-* is

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[34] Cf. the following note.

paralleled in *at-ta-ya-na-pa* ZDMG 91.560; it reflects probably a stem
*attai which is evident in I 87, 106.   The two Ras Shamra occurrences
are to be rendered, therefore, as 'by my fathers' (line 3) and 'to my
fathers' (line 4).

It follows that single *b/p* of the syllabary represents a voiced labial
while double writing stands for the corresponding unvoiced sound.   The
alphabetic representations suggest stops.   But the probable correspond-
ence of Ras Shamra *p* with syllabic *ww* indicates that Hurrian had also
a voiceless labial spirant[35] by the side of *w*, *b*, and (the stop) *p*.   Finally,
the question arises as to the value of *ú-a-*.   One would expect [wa] to
be written *wa*, which occurs indeed in words like *wa-a-aš-na-e* IV 64.
Unless the two writings are meaningless variants—an unlikely situa-
tion in view of the consistent orthography of the Mitanni Letter—*ú-a*
may reflect initially the same voiceless spirant which is found medially
as *-ww-*; these indications would point to [f] or [ʍ].

We know, then, that Ras Shamra *p* may represent a voiceless labial
stop initially or after consonants; and some voiceless labial spirant, pre-
sumably in any position.   On the other hand, *b* is supposed to indicate
a voiced labial stop.   It is a fact, however, that the genitive suffix of
Hurrian appears in the Mitanni Letter as *-wə* or *ú* (after *ww*); only
after *-w/b* is the suffix expressed by *p*, in the digraph *pp*; but this suffix
appears alphabetically as *b*, and in Boghazköi frequently as *-bi*.[36]   In
other words, Ras Shamra *b* may reflect at times a voiceless spirant
different from [w], presumably [v]; it is also possible, however, that the
sound in question was the aspirate [bh].   There is some circumstantial
evidence in favor of the latter assumption.

It will be remembered that Hurrian *p:b*, as presented in the alpha-
betic sources, share with the other stops of Hurrian a definite positional
relationship: the voiceless sounds occur initially, the voiced after vowels;
but a doubled voiced stop becomes unvoiced.   We know also that
Hurrian [p] differed from Akkadian [p] in that the former could be
written with *p*-signs as well as with *b*-signs.   These differences in pat-
tern make it probable that the Hurrian stops written *p t k* were voiceless,

[35] If I am right in assuming that the suffix *-a-ú* of transitive verbs was etymo-
logically related to the possessive *-iwwə* (both referring to the first person), the
final *ú* has to be regarded as an unvoiced semivowel.   It is suggestive that this *ú*
is repeated when another suffix follows: e.g., *a-ru-ša-ú-ú-n* III 2 (= *ʍun?*).   But
when the consonant in question is written double, the resulting form is *a-ru-u-*
ša-uš-še IV 48, 58.   Moreover, such forms as *šu-ú-ú-ra* II 93 and *šu-ú-ú-ta* III
113, IV 24 are left unexplained.   It appears that *ú* had more than one function.

[36] Thureau-Dangin, Syria 12.257 f.

hence [ḫ ḍ ġ]. Since their non-phonemic postvocalic variants *b d g* became unvoiced when doubled, it seems likely that these sounds were not merely the voiced counterpart of [ḫ ḍ ġ] but another set of sounds which resisted doubling. Aspirates suggest themselves as likely positional variants in such a set-up, and the presence of a [bh] is a distinct possibility in Hurrian on the evidence of variant writings. We would have thus the following relations:

[ḫ-] : postvocalic [bh]; but *[-bhbh-] > [pp]

At any rate, the established positional relations *p:b, bb > pp* (written single in Ras Shamra according to the Semitic rule) is sufficient to explain the use of double writing to mark lack of voice. Since doubling of postvocalic stops in Hurrian resulted automatically in loss of voice, double writing was employed to indicate voicelessness when the syllabary, which reflected a different sound-pattern, had no other means of marking this distinction. The device was extended to contrast other sounds which differed according to voice, such as the phonemes written in Ras Shamra as *θ* and *ź*, and the pair which appears in the syllabary as *ww* and *w* respectively.

Conclusion: Double writing of labials reflects in the syllabary two distinct voiceless phonemes: a spirant written *ww* and a stop written *pp/bb*. Conversely, single writing represents the semivowel [w] and another voiced sound written *p/b* that may be a spirant, aspirate, or simple stop.

III. *tt/dd : t/d*

The regularity with which the syllabary separates the double and single consonants of this group is demonstrated best in relevant suffixed formatives.

tt. The double writing occurs with (a) the enclitic pronoun -*tta* 'I' and (b) the verbal formative -*etta*.

(a) *i-n[u-ú-]ut-ta-* 'as I ... ' I 74; cf. KUB VIII 61 i 3; *še-e-ni-iw-wə-ú-ut-ta-* 'by my brother I ... ' (with the agentive -*š* assimilated to the following -*tt*) II 50; III 71; IV 41; *pí-sa-an-du-ši-i-it-ta-a-an* 'and I was happy about it' IV 9.[37]

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[37] The occurrence of the same enclitic personal pronouns as the subjects of intransitive verbs and as the logical objects of transitives is, to my thinking, one of the many strong arguments in favor of a passive orientation of the Hurrian transitive verb. But the translations given here are not meant to suggest that the subject in Hurrian was necessarily a 'nominative' in our sense of the term. Something less direct, much like the 'nominative absolute,' is a distinct possibility.

(b) This formative must be kept apart from -*et-a*, particularly since either may be found with the same verb (e.g., *ka-til-li-e-et-ta-* IV 109 : *ka-til-li-e-ta-* II 102). Verbs in -*etta* occur in clauses which are introduced by the particles *inu*, *inna*, or *ai*, followed by -*ma/enin*. The form, then, is not indicative. It is found with (1) intransitives: *ú-ni-e-et-ta* III *12, 21; *ti-i-ḫa-nu-u-ul-li-e-et-ta* III 22; cf. also III 29; IV 59; and (2) with transitives: *gu-li-e-et-ta* IV 59; *ka-til-li-e-et-ta* IV 109; *ša-a-ri-il-li-et-ta* IV 116. These transitive forms are syntactically of the actor-action type.[38] Hence they are not associated with nouns in -*š* and differ thus from the forms in -*et-a* (below).

t. The single writing is found with (a) the above-mentioned future element -*et-* with transitives; (b) the imperative plural element -*ten*, negated -*tuwen* (< *-*tu-wa-en*), with transitives; (c) a similar imperative or future element -*ten* with intransitives (sing. and plural); (d) the enclitic pronoun -*tilla-* of the first person plural;[39] (e) the dative suffix -*ta*; and (f) the suffix -*tan* 'for, about, concerning'. A pair of examples for each group will suffice, since single writing prevails throughout without exception.

(a) *ka-til-li-e-ta* II 109 and *ša-a-ri-il-li-e-ta* IV 124, both with nouns in -*š*; contrast the same two verbs in -*etta* (above).

(b) (*ennašuš*) *na-ak-ki-te-en* IV 117; negated form *na-ak-ki-du-u-we-en* II 52.

(c) *it-ti-ten* III 23; *pè-te-eš-ti-ten* III 28.

(d) *a-nam-mi-til-la-a-an* I 76; *iš-ta-ni-iw-wə-ša-til-la-a-an* IV 120.

(e) '*Ma-ni-e-ta* II 19; *u-u-mi-i-ni-i-ta* III 93, 112.

(f) *e-ti-i-tan* II 84; III 82 f., etc.

Significant correspondences with the alphabetic sources are:

Ras Shamra	Syllabic
-*d* (cf. ZDMG 91.573)	= dative suffix -*ta*
at 'father', ibid. 571	= *at-ta-* I 87, 106, etc.
ḫdn ḫdlr	= *Ḫutena ḫutellurra* (cf. ZDMG 91.563).

Conclusion: The use of *tt:t* follows the same pattern as *šš:š*, *ww:w*, and *pp:p*. The distinction is rigid, so that we are able to distinguish automatically between such verbal suffixes as *etta* : *eta*, which further examination proves to be heterogeneous.

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[38] In other words, the suffix -*etta* is analogous syntactically to the *i*-form of the verb (-*i*; -*uš-i*; -*et-i*) and to the form in -(*l*)*ewə*; cf. JAOS 59.309 ff.

[39] This form was first recognized by Friedrich, Kl. Beitr. z. churr. Gramm. 32 f.

IV. $kk/gg : k/g$

The use of single and double writing for distinctions of voice rather than quantity is found again in the present group. Two incidental departures do not affect the principle itself. One is the use of g-signs when the following vowel is $\acute{u}$,[40] while k-signs are used with u. In other words, the syllabary distinguishes here between two different types of back vowel which may be used after the sound in question; it does not distinguish between two different consonants. A corresponding division may be observed in the employment of $ki : gi$, although the evidence is not absolutely conclusive. The other departure is suggested by the alphabetic sources. Here k and g follow the rules of positional variation which obtain also for the other stops. We have thus $kmrb = {}^{d}Kumarbi/w\partial$, but $nbdg = {}^{d}Nupatig$ (ZDMG 91.570). Ras Shamra g is found, however, also initially, in $g\theta\hbar p$ (RŠ X 4.61). Brandenstein (ZDMG 91.569) points out that this word may correspond to syllabic $ge\check{s}\hbar i$ 'seat, throne', or the name of the Hurrian moon-god $Ku\check{s}a/u\hbar$. His preference is for $ge\check{s}\hbar i$ because this word is written with initial k or g, once also with $\hbar$.[41] At any rate, we have here a strongly aspirated velar, perhaps an affricate, for which neither Ras Shamra nor the syllabary had adequate symbols. It was obviously distinct from $k:g$.[42] Because of the presence of this sound in Hurrian some of the writings with k or g must be regarded as ambiguous.

That the signs ku and gu, which are not confused normally, indicate

[40] For the use of $\acute{u}$ in more than one capacity cf. note 35.

[41] It is worth noting that we have the same three-way variation in the initial of the personal name $K/\mathcal{H}/Gu\check{s}\check{s}i\hbar arbe$; cf. Annual of the Am. Sch. of Oriental Research 16.59 note 1. Moreover, the $\check{s}$ is written double, so that it might correspond to the θ of RŠ $g\theta\hbar$-; but the following $\hbar$, which would seem at first to support the identification with the RŠ word, is really part of the element $\mathcal{H}arbe$ and not of the first word of this compound, the whole name being Kassite and not Hurrian. Nor is an identification with the moon-god $Ku\check{s}a/u\hbar$ admissible, owing to the single $\check{s}$. Brandenstein's comparison with $ge\check{s}\hbar i$ is the best in these circumstances. We learn, however, that the initial sound in non-Hurrian $K/\mathcal{H}/Gu\check{s}\check{s}i\text{-}\mathcal{H}arbe$ was expressed by the Hurrians in the same way in which they treated an analogous sound of their own.

[42] This fact has some bearing on the question of the phonetic character of that g which appears as the postvocalic variant of k. For that sound could not have been the same aspirate that is represented by the variants $k/\hbar/g$. If $g:k$ was an aspirate, then $k/\hbar/g$ has to be regarded as an affricate; if the latter was an aspirate, however, the former was probably some type of spirant. Obviously, Hurrian phonology is far more complex than anyone could have thought before the discovery of the Ras Shamra material.

a vocalic rather than a consonantal difference may be seen from the following examples:[43]

šu-uk-ku-u-ut-ti II 68 : *šug-gu-ú-ud-du-u-u-ḫa* II 70; *šuk-ku-u-um-ma-ma-an* III 111; *a-gu-ú-a* I 81 and *a-gu-ú-e* IV 123.

kk. This writing characterizes a common verbal suffix which appears as *-i-kk-* with transitives and *-u-kk-* with intransitives.[44] The precise force of this suffix is unknown so far; it is probable, however, that it imparts to the stem a participial function. Cf., e.g.:

ka-ti-ik-ki IV 17; *ta-a-nu-ši-ik-kat-ta-a-an* II 5

ú-ru-uk-ku II 99, 101; III 46, 123; *ú-ú-nu-uk-ka-la-an* IV 3

With *gg* the same suffix may be posited in words like *na-wu-ug-gu-ú-un* III 8, alongside *na-wə* IV 15 and *na-wa-a-an* IV 7.

As a radical element this phoneme is found, e.g., in **nakk* 'despatch': *na-ak-ki-en* IV 42, 51; *na-ak-ki-te-en* IV 117; in the common (adverbial?) *šuk-ku* II 12; III 49, 75; IV 1, and forms compounded with it; and in the pronominal *ag-gu-uš* I 81, *ag-gu-uš-ša-a-an* IV 123, and *ag-gu-tan* II 61 'this one', which differs in spelling, strangely enough, from **agu-* 'that one' (see below).

k. The single writing is found consistently with the verbal formative *-ukar*, e.g.: *ta-a-tu-ka-a-ri* II 67; IV 130, etc.; *a-gu-ka-ra-aš-ti-en* II 58, 86; *aš-du-ka-a-ri-iw-wə-ša* II 76. As a radical element *k/g* characterizes a number of common words; cf. *a-g-* 'lead, guide' I 87, II 60, and the numerous personal names with *a-ki-*; *ma-ka-a-an-ni* 'gift' II 15, 54; III 58; the name of the sun(-god) *Ši-mi-(i-)gi* I 77, 86, 87, 94, etc.; and the pronoun 'that one, the other' *a-gu-ú-a* I 81; *a-gu-ú-e* IV 123. The last example seems to show that Hurrian differentiated its pronouns 'this' and 'that' only with regard to voice in the one consonant involved; but this phonemic difference would imply etymological independence, for all the apparent identity of these words.

Conclusion: In the double and single writings of *k* we have again an indication of voice rather than quantity. The use of *g*-signs by the side of *k*-signs does not prove graphic confusion in this instance; but it has nothing to do with voicing. The distinction affects the vowel which follows the stop: if *gu* marks a palatal consonant + [u], *ku* would mark the same consonant + something like [ü] or, more probably, [o]. In addition to this particular set of consonants which differed only according to voice, Hurrian had another phoneme which is not to be confused with the prototype of syllabic *kk:k* and alphabetic *k:g*. This

[43] This was determined correctly by F. Bork, Die Mitannisprache (1909) 14 f.
[44] Cf. JAOS 59.298 ff.

phoneme is betrayed in the alphabetic sources by an initial g (instead of k); the syllabary reflects the same phoneme by means of $k/ḫ/g$. The presence of such a phoneme, whatever its precise phonetic character, constitutes a warning against assuming single phonemes for the other stops.

V. $ḫḫ : ḫ$

The use of $ḫ$-signs in the syllabary does not lead to definite conclusions, such as were reached for the preceding four groups of writings. Doubt attaches also to the alphabetic evidence available so far. Nevertheless, the combined material suggests the probability of two distinct velar phonemes in Hurrian which were differentiated according to voice. The syllabary would mark the distinction by using single writing for the voiced sound in question, and double writing for the unvoiced. More material will be needed, however, before this probability can become a certainty.[45]

To begin with, Ras Shamra Hurrian employs the symbol $ḫ$ in all positions, initially ($ḫžlž$ RŠ X 4.1 ff.), as well as after vowels ($trḫn$ ibid. 55). This symbol represents presumably a voiceless velar spirant similar to the Semitic [ḫ]. In addition, the alphabetic sources employ another sign which some scholars regard as the analogue of x in the Semitic texts, an ambiguous character which represents both Semitic [ġ] (the voiced counterpart of [ḫ]) and [ẓ];[46] but C. G. v. Brandenstein regards the character in question as a graphic variant of $θ$.[47] The latter view is exceedingly dubious. In the phrase $tθb$ $ḫlpx$ (RŠ X 4.10) the parallelism of all the other paragraphs of the text precludes a suffix $-θ$. The context suggests 'Teshub of Aleppo', which would be expressed syllabically as $*Teššub$ $Ḫalpaḫi/e$.[48] Other occurrences of the disputed sign are less suggestive, but they seem to favor correspondence with syllabic $ḫ$ rather than $šš$.

Turning now to actual examples in the syllabic sources, we find there a common adjectival suffix of relationship $-ḫi/e$,[49] which appears almost invariably as single $ḫ$- after vowels. The best example of this formative

[45] I assumed a voiced and an unvoiced $ḫ$ in Hurrian in JAOS 58.197 ff., but I can no longer uphold my former argument in its entirety.

[46] Cf. W. F. Albright, Jour. Palestine Or. Soc. 14.104 ff. (1934).

[47] ZDMG 91.575.

[48] So already B. Hrozný, Archiv Orientalní 4.128 (1932). Incidentally, $Ḫalpaḫi$ occurs as a personal name in the Nuzi texts.

[49] Cf. Friedrich, Anal. Orient. 12.122 ff.

is the ethnicon *Ḫur(w)uḫe* 'Hurrian' I 11, 14, 19, etc., written with one ḫ in all its eight occurrences in the Mitanni Letter. The Boghazköi evidence of place-names in *-ḫi* (cf. J. Friedrich, Analecta Orientalia 12.122 ff. [1935]) is all but restricted to single *-ḫ-* (exception: *Šuruḫḫi* ibid. 127); from Nuzi we have forms like *Nu-za-ḫé* 'Nuzian' N 482.21 and *Lu-ub-tu-ḫi* 'from Lubdi' HSS X 231.6 (= *lbtx* RŠ X 4.36?). It would follow that this particular suffix, which occurs normally in single writing of ḫ, corresponds to the alphabetic suffix *x*; since that character is best related to a similar Semitic character known to represent Semitic [ǵ], a voiced velar spirant, single ḫ in the syllabic sources may be regarded as indicating a voiced sound. There are, however, certain difficulties in this connection. Thus the name of the goddess 'Hepa(t)'' is written in Ras Shamra as *ḫbt*[50] (ZDMG 91.570); but the initial sound occurs in the syllabic texts as a single ḫ in compounds like *Ta-a-tu-ḫe-e-pa-* III 103; IV 67, 89; KUB XXVII 23 iii 2, 3, 6, where double writing could have been used if necessary. Furthermore, the adjective 'male' appears to be normalized in Boghazköi as *duruḫḫi-* (with *-ḫḫ-*), while 'female' is often *ašduḫi-*[51] (with *-ḫ-*), although the respective suffixes are plainly identical. For the present we have to confine ourselves, therefore, to listing the principal occurrences of *-ḫḫ-* on the one hand, and *-ḫ-* on the other.

ḫḫ. This writing is favored in the adverbial complex in *-uḫḫa*: cf. *še-e-en-nu-uḫ-ḫa* IV 121; note also II 10 (bis), 25; III 17, 95; IV 130; exceptions: II 70; III 96. The double writing characterizes also the loanwords *ḫiaruḫḫ-* 'gold' III 66, 73, 77, etc.; KUB XXVII 29 iv 15; XXIX 8 iii 32; *šiniperuḫḫ-* 'ivory' II 59; III 97.

ḫ. Apart from the suffix of relationship, the single writing is found with verbal themes in *-uḫ*: *anzannuḫ-* 'ask for, seek' I 18; III 50 f.; but *-uḫḫa* IV 129; *ḫisuḫ-* 'cause pain' I 110; III 76, etc., also *irnuḫ-* III 67, 70; *išuḫ-* IV 90, 92; *šapuḫ-* I 95; *uluḫ-* II 11; III 16; IV 60. The occurrences of ḫ as a root-element are inconclusive in spite of the consistent single writing. The same applies to etymological *ḫḫ*. In neither case is an analysis possible owing to the lack of definite alphabetic correspondences.

[50] The *t* is also troublesome, owing to the writing of this name as *Ḫe/iba* (without *t*), when used as a theophoric element; cf. e.g. J. A. Knudtzon, Amarna 1556, and HSS 9.24.5 ff. (Nuzi).

[51] Friedrich, Anal. Orient. 12.124; but *-ḫḫ-* is found, e.g., in KUB XXVII 1 iii 4, 5; 3 i 13, 14; 8 rev. 10; 16 iii 12, etc. But the occasional writing with *-ḫ-*, as compared with the regularity of the writings discussed previously, prevents a more positive statement in this instance.

Conclusion: There is a measure of probability in the assumption that the alphabetic texts reflect both a voiced and a voiceless velar spirant, the former corresponding to syllabic *ḫ*, the latter to *ḫḫ*. But the syllabic texts fail to show the same consistency in separating the two forms of writing that has been demonstrated for the stops and for *šš:š*.

VI. Other uses of double writing

In the groups considered so far the primary purpose of double writing was to mark lack of voice; conversely, single writing indicated voiced consonants. The same distinction may have been applied to syllabic representations of other consonants where voice was a phonemic factor. It is probable, e.g., that *zz:z* preserve an analogous dichotomy; but the available material does not encourage a more positive statement in this respect.

There are instances, however, where double writing serves strictly quantitative purposes. In all likelihood, the sounds involved recognized but one voice-class. To this category belong *l*, *n*, and *r*.

l. The enclitic personal pronoun -*til(l)a*- 'we' occurs normally with double *l*; but this sound may also be written single. In one sentence (I 76–7) where this enclitic occurs five times, the double writing is found twice, while the *l* is written single three times: *a-nam-mi-til-la-a-an* . . . ᵈ*A-ma-a-nu-ú-ti-la-an* ᵈ*Ši-mi-i-gi-ni-e-ti-la-an* ᵈ*E-a-a-šar-ri-ni-e-ti-la-an* *ma-an-šu-til-la-a-an* . . . . It is worthy of notice that when the *l* is written single the following *a* is also reduced. This particular interdependence serves to emphasize the fact that actual quantity is at issue, although the reasons for the uniform reduction cannot be analyzed as yet. For other occurrences of -*ti-la-an* cf. II 11; III 16, 108.

The enclitic pronoun for the third person plural -*l(l)a/e*- 'they' is subjected to analogous treatment.[52] Here too double writing is the rule. But single *l* is found twice in II 23–4: *ḫu-up-lu-uš-te-la-an* . . . [. . .]-*na-a-ku-lu-uš-te-la-an pè-te-eš-te-el-la-a-an*, double *l* again preceding repeated *a*. Cf. also IV 2–3: *ma-a-an-nu-uk-kal-la-a-an* . . *ú-ú-nu-uk-ka-la-an*; similarly, *ur-ḫal-la-a-an pal-ta-a-la-an* IV 23, 29; (*u-ya-ma-a-an*) *ku-zu-u-ši-uw-wǝ-la-an* IV 46.[53] An exception to the rule that the reduction must affect both consonant and vowel simultaneously may be *ag-gi-la-a-an* IV 70, provided that we have here the same enclitic element as above.

[52] Cf. Friedrich, Kl. Beitr. z. churr. Gramm. 27.

[53] For a similar treatment of the agentive (?) -*š* followed by -*an* see above, p. 323.

Long (or double) *l* may result from assimilation of the *n* in the plural ending *-na* to a preceding etymological *l*: *u-u-ul-la* (< **uli-na*) II 82, 89; III 32; *ša-wa-al-la-ša* (< **šawala-na-ša*) I 79; cf. also *še-e-ni-iw-wə-ú-ul-la-a-an* (< **šeniwwuš-lla-*) I 107, 113; IV 19, 39, 40, 51; 110. It is logical, therefore, to posit that *-ll-* is invariable when it represents a long sound resulting from assimilation; elsewhere the writing may vary. In other words, the primary consideration here is not voice but quantity. When morphologically significant, quantity is regularly indicated; when not, other considerations may prevail.

n. The orthographic principles deduced for *l* apply also to *n.* The product of assimilation appears always as *nn*: *enna* 'gods' (< **eni-na*) I 78; II 52; IV 117; cf. also II 77; *uminna* 'countries' II 83, 88, 89, 93, 96; III 25, 32, 73; IV 124. But etymological *nn* appears also as *n*: *ma-a-an-na-a-an* (*ḫilli*) II 84; *ma-a-na-an* (*ḫilli*) II 93.

r. The same conditions are to be observed with *r*. We get *rr* for *r + n* in *terra* and ᵈ*Ḫutellurra* (with **-na*);[54] *ni-ḫa-a-ar-ri-e-wə* (< **niḫarⁱ-ne-wə*) III 41 and *a-wa-ar-ri-we₆* (< **awarⁱ-ni-we*) KUB XXVII 1 ii 12 (these two examples being in apposition to forms with unassimilated *ni/e*). For *r + l* the double writing is found in *ta-a-du-ka-a-ar-ri-e-wə* (< **tadukar-l-ewə*) III 65; IV 123; cf. also II 85.[55] I have not noted any examples with etymological *rr*.

Summary

The Hurrian syllabic orthography came to employ double writing for two unrelated purposes: lack of voice and indication of length. Where sounds were differentiated according to voice double writing was used to represent the voiceless sounds. This method was applied to *p t k*; to a spirant (written *-šš-*) which was intermediate between Semitic [ṯ] and a sibilant; in all likelihood to *ḫ*, and probably also to the voiceless counterpart of *z*. But in the case of *l n r* (and probably also *m*) double writing expressed true length or gemination; obviously, these sonants did not have corresponding voiceless sounds.

The use of double writing to mark lack of voice seems to be connected with an inner-Hurrian phonetic situation. Hurrian *p t k* (i.e., sounds represented by these stop-symbols) varied with post-vocalic sounds which are written alphabetically as *b d g*; these non-phonemic variants became unvoiced when doubled. Hence doubling and consequently also double writing implied lack of voice. Since the doubled voiceless

[54] Friedrich, op. cit. 6.
[55] Cf. Speiser, JAOS 59.307 note 56.

stops were independent phonemes and not merely phonetic variants, double writing could be extended to other voiceless sounds which were not subject to positional variation.

It is possible, although conclusive proof for such an assumption cannot be adduced as yet, that Hurrian *p t k* were unvoiced mediae which became voiced aspirates under the assimilatory influence of a preceding vowel. Such a hypothesis might explain why the voiced variants—in reality composite sounds—became unvoiced when doubled.[56]

At all events, we have to bear in mind the fact that Hurrian had other stops, or sounds expressed as stops in the alphabetic and syllabic sources alike, which did not follow the positional pattern. This is true of the initial sound in Ras Shamra *gθḫp* where the *g* patterns differently from the ordinary medial *g*. There exists at least the theoretical possibility that Hurrian had a corresponding phonemic *d*, and perhaps also a labial of the same group. Furthermore, it is doubtful whether all the stops that the syllabic orthography happens to write double necessarily represent doubled *p t k*. In a word like *attaippa* 'to thy father' the labial is doubled since the form consists demonstrably of *attai* + *b/w* (the possessive suffix of the second person) + the directional element *-wa*. But the *tt* of the stem cannot be proved to be double or long; indeed, the Mâri form *a-ta-i-ta* 'to (the) father' suggests a stem *ata(i)* with simple *t*.[57] Just so, we may have etymological voiceless stops, possibly undoubled, in *agg-* 'this one', *itt-* 'go', and the like. These stops would be the voiceless counterparts of the series **b *d *g*, unrelated to *p : b t : d k : g*.

The Mâri example just cited has an incidental bearing on the chronology of the system of orthography discussed in this paper. It is one of a number of available illustrations which show that the Hurrian texts from Mâri, which date to the beginning of the second millennium B.C., correspond orthographically to contemporary Babylonian documents. On the other hand, the Hurrian syllabic orthography of the Amarna age

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[56] This interrelation would parallel very closely the non-phonemic positional variation of stops and spirants in Canaanite. A few years ago I suggested that this manifestly un-Semitic pattern of the Canaanite stops might be ascribed to Hurrian influence. I did not know at the time (cf. provisionally, JBL 53 vi f. [1939]) that the Hurrian material provided so striking a parallel. A full discussion of spirantization in Canaanite will be presented elsewhere.

[57] Cf. RA 36.17 no. 5.5. That we have here an unrecognized occurrence of *at(t)a(i)* 'father' is shown by the otherwise rare stem-ending *-ai* and by the association of this word with the god Kumarwe (the father of the gods), ibid. 4.

(after 1500 B.C.), as represented in the Mitanni Letter and the docu-
ments from Boghazköi, is better adapted to inner-Hurrian needs. It
follows that the orthographic methods presented above were developed
some time after the Mâri period; or else, the West Hurrian texts reflect
here too an independent orthographic tradition.[58]   In either case, the
latter documents should not be treated as on a par with the Mâri
material.

We are only beginning to appreciate the wealth of sounds, especially
of stop-sounds, in Hurrian, a language that was not so long ago assumed
to have only a single set of mutes.   The one thing that is certain so far,
where strictly Hurrian texts of the Amarna age are concerned, is the
use of double writing to mark lack of voice, not only with stops but also
with all other sounds that had corresponding voiced elements, whether
phonemic or merely phonetic.   This realization alone is an important
step forward.   It promises to advance the study of Hurrian phonology,
and is not without interest to students of Hittite.[59]

[58] See above, note 1.   The Mâri syllabic texts in Hurrian follow the orthog-
raphy of the local Semitic documents just as Ras Shamra Hurrian texts which
use the alphabetic script employ, with only minor modifications (θ, $\check{z}$), values
designed for another Semitic language (Ugaritic).   In both these instances, how-
ever, Hurrian was using scripts which had not been established very long; Old
Babylonian still struggles with the expression of the Semitic emphatics (cf. A.
Goetze, Orientalia 6.12 ff. [1937]), while Ras Shamra employs the same symbol
for Semitic $\dot{g}$ and z (see above, note 46).   It is possible, therefore, that the gradual
normalization of the syllabic orthography in the dialects of Middle Akkadian
may have hastened the emancipation of the Hurrian syllabic orthography from
its Semitic analogues.

[59] The results of the present study are also of some interest to students of
Dravidian linguistic connections.   Ten years ago G. W. Brown virtually antici-
pated the discovery of the Hurrian device of marking voicelessness by means of
double writing (The Possibility of a Connection between Mitanni and the Dra-
vidian Languages, JAOS 50.273-305, esp. 280).   The above discussion would thus
seem to lend color to Brown's cautious argument.   Nevertheless, a closer exam-
ination of the problem, made possible by recent progress in Hurrian studies, can
lead only to a negative conclusion.   The pronouns and numerals of Hurrian show
no connection with the corresponding elements of Dravidian.   Moreover, the
syntax of the Hurrian verb suggests radical differences from Dravidian.   Finally,
the positional relationship of the stops in Tamil, which seems to recall the Hurrian
pattern, is regarded as a late development within Dravidian (cf. Linguistic
Survey of India 4.288).   The existing similarities between the two groups, such
as the absence of prefixes and the use of a negating infix in the verb, bespeak at
best related linguistic types.   There is nothing in the available evidence which
would argue a genetic relationship between Dravidian and Hurrian.

Addendum

Since the present article was sent to the Editor (February) P. M. Purves published in The Am. Jour. of Sem. Lang. 57.162–87 (April 1940) his very important article The Early Scribes of Nuzi. The discussion is based on different sources from those which I have utilized, and it touches only incidentally on problems of phonetics and orthography. Because of its independent approach and dissimilar source material, Purves's article is an especially welcome supplement to the present study; for the results coincide fully wherever common problems are involved.

For the past six months I have been at work on an Outline of the Grammar of Hurrian, which will be published as vol. 20 of the Annual of the Am. Sch. of Orient. Res. It is now possible to be more precise and definite on a number of details than I have been in the above discussion. But the final results do not weaken in the least the argument which has just been presented; on the contrary, they add considerable corroborative material. Inasmuch as the present article and the forthcoming Outline differ in their principal objectives, the two may be regarded as mutually complementary, although they present a certain amount of duplication.

MISCELLANEA

A FURTHER NOTE ON *sa* IN ARCHAIC IRISH

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In LANG. 16.12-6, I indicated that alongside of *som*, cases occurred where *sa* was also employed in archaic Irish as the enclitic emphasizing pronoun of the third person masculine and neuter. After citing several instances that seemed to me reasonably certain, I quoted a few examples which were open to question. Among these, I included *focicertsa* from the unpublished version of the Bruiden Átha Í in the Yellow Book of Lecan, and I added (16.15) that Kuno Meyer regarded it as 'a scribal error for *fo·cicherr*, though it should be noted that in the recension printed from Stowe MS 992 *sum* apparently replaces *sa*'.

But upon examining the photostats of both MSS of this text which have just reached me, I find that Meyer's statement and mine need to be somewhat revised. In the first place, the Yellow Book of Lecan writes *fochicertsa* and not *focicertsa* as Meyer asserts.[1] In the second place, there are several illegible lines at this point in Stowe MS 992, so that *sum* in this codex does not replace *sa* in the other MS, but is all that can be read of *do·ronsom* 'we have done', which occurs later in the Yellow Book of Lecan. The reading corresponding to *fochicertsa* cannot, therefore, be established in Stowe MS 992. That is regrettable, since *fochicertsa* cannot be right as the context shows: *dia·marad mac Maic Niad, fo·chicert-sa mu gair gubai-si* 'if the son of Mac Niad were alive, he would utter (literally: would put) my cry of lamentation'.[2] Here, the sequence of tenses requires the conditional 3d sg. *fo·cichred* and not the future 3d sg. *fo·cicherr* as Meyer proposed. But more significant would have been the fact whether the scribe of Stowe MS 992[3] substituted *som* for *sa* or retained the archaic form of the emphasizing pronoun. That, unfortunately, cannot be determined. Although the verb may have been incorrectly transmitted, the Yellow Book of Lecan, which is the older and better MS, has at least preserved *sa*, nor is the survival of this archaism surprising, since other linguistic evidence

[1] Fianaigecht XIX.
[2] Yellow Book of Lecan col. 951, l. 46.
[3] Now MS D. IV. 2.

can be adduced[4] to prove that the Bruiden Átha Í was composed in the
8th century when *sa* had not yet been completely supplanted by *som*.
No further hesitation seems, therefore, necessary regarding the inclu-
sion of *fo·cichred-sa* among those instances cited in my former article
which point to the employment of *sa* as a by-form of *som* in archaic
Irish.

In the Rawlinson version of the Tochmarc Emire,[5] the archetype of
which also belongs to the 8th century, there exists another possible
example of *sa* which I had not previously noted: *craitsiusa co·nbobig a
mmer* 'he hurt her, and broke her finger'.[6]   If the text is sound, *crait-
siusa* should perhaps be emended to *craitsius-[s]a*, where [s]*a* would
refer to the subject of the sentence, the object being expressed by the
feminine affixed pronoun -*ius*. For *craitsiusa*, MS D. IV. 2 of the
Royal Irish Academy, however, has *cráidsius*,[7] but the Middle Irish
scribe may have omitted [s]*a*, because he no longer understood the con-
struction.   Whether the [s]*a* in *craitsiusa* is, consequently, the em-
phasizing pronoun of the 3d sg. masc. remains uncertain, but the
possibility of such an explanation should, at all events, not be over-
looked.

ITAL. *madrigale* AND RENAISSANCE ETYMOLOGISTS

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Ital. *madrigale* 'madrigal' has, at an earlier date, been derived from
mandra 'herd'[1] and other etyma; the etymology which has received
acceptance in most quarters has been that from *matricale* (*carmen*)
'(song) in the mother tongue or vernacular'.[2]   As a recent attempt has

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[4] For example, *ad·luastur*, corrupt for *as·lúsar* 'it may have been drunk', where
the perfective aspect of the verb is still expressed by means of the preverbal
preposition *ess-* which is written *as·* in pretonic position.

[5] Ed. K. Meyer, Revue Celtique 11.433 f.

[6] Op. cit. 11.446, l. 69.

[7] Cf. A. G. Van Hamel, Compert Con Culainn and Other Stories 51, §69.

[1] Rightly rejected by Meyer-Lübke, REW[3] §5290, s. v. *mandra*.

[2] L. Biadene, Rassegna bibliografica della letteratura italiana 6.329–336 (1898);
accepted by Bloch and Gamillscheg in their French etymological dictionaries s. v.
madrigal.   No mention is made of this etymology, presumably through oversight,
by Meyer-Lübke, REW[3] §5416, s. v. *matricale*.

been made[3] to revive the Renaissance derivation[4] from *materiale* 'coarse > bastard (poetical form)', it may be of value to call attention to the arguments against this etymon and in favor of *matricale*.

Phonetically, *madrigale* cannot come from *materiale*, whereas it can be derived from *matricale* on the assumption of dialect borrowing from North Italian, in which *-tr-* > *-dr-* and *-c-* > *-g-*. In standard and North Italian, *-iale* remains as such; nor can any 'spontaneous' *-g-* have arisen here, as such an occurrence takes place only between two back vowels (*Paolo* > *Pagolo*, *paura* > *pagura*, *raunare* > *ragunare*) and is characteristic of South Tuscan, specifically Sienese.[5] But the madrigal was a genre of North Italian origin,[6] and this is a further argument in favor of the assumption of borrowing from North Italian. *Matricale*, moreover, is the earliest form on record, thus presenting us with an attested etymon.[7]

The meaning 'coarse > bastard (poetical form)' is only an ex post facto belletristic explanation applied by Antonio da Tempo and Bembo to the irregular metre and versification of the madrigal form in poetry; it can have no application to the refined and highly developed musical type. The semantic development through the sense 'song in the vernacular' proposed by Biadene, or possibly through the meaning 'lullaby', is perfectly satisfactory.

The above case should serve as a warning—if further warning be needed—of the care that must be exercised in accepting the derivations put forward by Renaissance etymologists. A few (Tolomei, and, less often, Castelvetro and Cittadini) had a clear concept of phonetic law and of critical evaluation of word-derivation in relation to the sound-changes involved; most, however, including Cardinal Bembo, placed the cart before the horse in considering the semantic aspect of etymology before, not after, the phonetic aspect, with resultant confusion and phonetically impossible etymologies.

Matricale, in short, is the only acceptable etymon for Ital. *madrigale*.

[3] L. Spitzer, ZRPh. 55.168–170 (1935).

[4] First proposed by Bembo, Prose della volgar lingua, Book II; repeated by Doni, Compendio dei trattati dei generi della musica 113 (Roma, 1635), and by Crescimbeni, Commentari intorno alla volgar poesia 1.1.22.

[5] Grandgent, From Latin to Italian 87; Hirsch, ZRPh. 9.565–567 (1885).

[6] Cf. Grove's Dictionary of Music and Musicians 3.275–279 (reprint, 1935) and further references there cited.

[7] In the Latin glosses of Francesco da Barberino (1318–1325), cited by G. Cesari, Die Entstehung des Madrigals im 16. Jahrhundert (Cremona, 1908).

CRITICAL NOTES ON OLD NORSE PHONOLOGY

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1. *Māl* 'speech' < **maþla*. According to the orthodox view[1] þ disappeared without change before *l*. According to Sievers[2] þ was first shifted to χ > *h*, as in WGmc., with loss of *h* before *l*; cf. **maþl* > **maχl* > **mahl* > ON *māl* : OHG OS *mahal*. It is certain that in ON þ did disappear without the intermediate shift to χ > *h* after a long radical vowel, thus in **nāþlu* > *nǫl* 'needle' = Goth. *nēþla*, where in WGmc. this loss did not occur (OE *nǣdl*, OFris. *nēdle*, OS *nādla*, OHG *nādala*). If ON þ after a short radical vowel underwent the shift in question, we should expect the shift to have taken place under the same conditions in WGmc. According to Sievers WGmc. þl remained wherever the *l* continued unvoiced, but was shifted to χl > *hl* wherever the *l* became voiced: thus nom. sg. **maþl* (with voiceless *l*) but gen. sg. **mahles* (with voiced *l* due to the following vowel); the type of OHG *mahal*, beside *madal* = OE *mæðel*, he explains as due to the influence of the verbal form *mahalen* < **mahaliẹn* < **mahaliạn*. That these conditions do not hold for ON is apparent from the example of **maþliðō* > **mǣlþa* > *mǣlta*, for if the *l* before the vowel *i* in **maþliðō* had become voiced we should have expected a form **mǣlða* > **mǣlda*. This discrepancy between North and West Gmc. led Sievers[3] to assume that ON þ before *l* in accented syllables was everywhere shifted to χ > *h*, i.e. without the restrictions characteristic of WGmc. But since this hypothesis has no factual support and is inconsistent with his theory regarding WGmc. conditions, there is no necessity for accepting it, especially as it in no way invalidates the orthodox view.

2. *Mullaugr* < *mun-laugr* (< *munn-* < *mund-*) 'hand-basin'. According to Noreen[4] the assimilation of *-nl-* to *-ll-* was due to an originally accented ultima, parallel to **ain-lið-* > *ellif-(u)*, where the retention of the *-i-* indicates that it originally bore the chief stress. It is doubtful, however, as Noreen himself admits ('mit urspr. haupttoniger ultima?'), whether in the compound *mund-laugr* the ultima ever bore the chief stress (cf. Heusler, op. cit. §43, Anm.). Noreen's hypothesis is evi-

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[1] Cf. Noreen, Aisl. Gramm.[4] §236; Heusler, Aisl. Elb.[3] §163.

[2] PBB 5.533 ff.; IF 4.335 ff. Sievers' theory has evidently been accepted by Prokosch in his Comparative Germanic Grammar (Linguistic Society of America, 1939): 86 'ON **mahla-* > *māl*'.

[3] PBB 5.533: 'Im nordischen scheint þl nach betonter silbe überall zu hl, dann zu *l* mit dehnung des vorangehenden vocales geworden zu sein. ... '

[4] Aisl. Gramm.[4] §266, 4: '*nl* > *ll* wahrscheinlich nur unmittelbar nach urspr. schwachtonigem vokal, z.b. ... *mullaugr* (mit urspr. haupttoniger ultima?). ...'

dently based upon the fact that in originally accented syllables *n* regularly disappears before *l* (cf. OHG *Analo* : ON *Āli*). But the *n* in *munlaugr* with an ordinary chief stress on the first syllable could have been retained through association with the independent word *mund* 'hand', especially since both the forms *mund-* and *munn-* already occurred in the compound (cf. *mun-ligr* 'delightful' : *munr* 'delight'). In *mun-ligr* (instead of the phonetically correct **mū-ligr*) the chief stress must have been on the first syllable, as *-lig-* < **-līk-* shows. The analogically retained *n* could then be easily assimilated to the following *l*; *munlaugr* > *mullaugr*. The form *mullaugr* does not occur often and the rare assimilation *-nl-* > *-ll-* most likely represents a late (dialect?) development.

3. Does the *g* in the combination *gð* < *ggð* represent a spirant or a stop? Examples are **byggða* > *bygða* (inf. *byggva* 'to build, dwell'); *byggð* > *bygð* 'a settlement'; **skyggða* > *skygða* (inf. *skyggva* 'to shade'). According to Noreen[5] the *g* in *gð* here represents a spirant, according to Heusler[6] a stop. I believe Noreen is right because *bygða*, *skygða* never became **bygda*, **skygda*, which would have been the case if *g* here had represented a stop; cf. *hugða* 'I thought', *dugða* 'was useful' (with spirant *g*) never > **hugda*, **dugda*, but *hengða* 'hanged' > *hengda* (with stop *g* after the nasal). In the type *fylgða* > *fylgda* (inf. *fylgja* 'to follow') the shift of the spirant *ð* > *d* was undoubtedly due to the labializing effect of the preceding *l* (cf. *skelfða* > *skelfda* 'trembled'). After the labialized *l*, *ð* was at an early period assimilated to *d* (cf. *talða* > *talda* 'talked'). That in the substantive form *byggð* the *ð* was not shifted to *d* may be explained by the fact that the older form *byggð* was displaced by *bygð* at a time when *ð* had not yet been shifted to *d* after the stop *g*. Or this shift may have been prevented by the example of *bygð*. The *-ð* in *byggð* : *bygð* thus remained parallel to the *-ð-* in the verbal form *bygða* (cf. *hvīlð* : *hvīld* 'rest', parallel to the verbal forms *hvīlða* : *hvīlda*).

4. *Fįānde* > *fįande* 'enemy' or *fįande* > *fįānde*? Noreen[7] favors the latter hypothesis on the ground that the *ā* in *fįānde* was due to associa-

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[5] Ibid. §246. 2: '*g* wird ... zu ʒ nachvokalisch vor konsonanz, z.b. prät. *bygþa* zu *byggua* wohnen. ...'

[6] Aisl. Elb.³ §189, Anm.: 'In Fällen wie *byggþ* "Ansiedlung" (zu *byggia*) ist zwar das *-gg-* gekürzt, aber es ist Verschlusslaut geblieben. ...'

[7] Aisl. Gramm.⁴ §51, 2b: '... *fiande* ... neben dem aus *fiande* (mit starktonigem *-and-*) entwickelten *fiande* und, mit anschluss an *fiá* hassen, *fiánde*....' Noreen writes *i* for *į* and *ı̄* for accented *ī*.

tion with the verbal form *fi̯ā*.   This assumption is untenable because
the combination *i̯a* in the earlier form *fi̯andi* (Goth. *fijond-*) must have
become *i̯ā̊* through the shift of accent, exactly as in the verbal form
fi̯a > *fi̯ā̊*.   On the other hand, the form *fi̯ande* can easily be explained
as derived from *fi̯ānde* through shortening of *ā* before the combination
-nd- (cf. **sebunde* > **si̯ŭnde* > *si̯ŭnde* 'seventh').   Noreen[8] admits the
possibility of this development of *ŭ* in *si̯ŭnde* but denies the parallel
development of *ă* in *fi̯ānde* > *fi̯ande*.[9]   Heusler (op. cit. §96) and Iversen
(Norroen Gramm.[2] §31, 2) are right in deriving the form *fi̯ānde* from
fi̯andi and not from *fi̯ande*.

[8] Ibid. §133, Anm.: 'vgl. aber *siunde*, *sionde* mit *iu*, *io*, wol weil zwei konso-
nanten folgen.'

[9] According to Larsson's Ordförrådet i de älsta isländska handskrifterna (Lund,
1891) 89-90, the normal form in the oldest MSS was *fiāndi*.

REVIEWS

LINGUISTIC ASPECTS OF SCIENCE. By LEONARD BLOOMFIELD. (International Encyclopedia of Unified Science; Foundations of the Unity of Science 1.4.) Pp. viii + 60. Chicago: University of Chicago Press, 1939.

Any thoughtful scientist whose field of interest extends beyond the immediate objects of his scientific pursuits must look with great interest on the Unity of Science movement. No one can dispute the desirability of the task this movement has set out to accomplish. The great diversification of science has resulted in corresponding confusion not only in the mind of the common man who tries to understand it, but in the minds of the scientific men themselves. Even in some very limited fields of science, the facts of observation and experiment are so complex and numerous that the sheer attempt to hold them in mind is difficult, let alone the attempt to interpret them. The multiplicity of facts reported about the behavior of chromosomes in meiosis and their bearing on the problems of chromosome structure and genetic crossing-over may be cited as an example. If by the introduction of a scientific language, symbolic or otherwise, the same kind of simplicity of expression and unity of fundamental ideas can be brought about in the non-quantitative fields of science as mathematics has produced in the quantitative fields, a new future of scientific development lies before us.

In the past there have been other attempts at the unification of science on the basis of some sort of order. The Mind of the Creator served for centuries, and mathematics is still, in the opinion of some, the source of all order. These attempts have borne very important fruits but have met with only partial success in the attainment of their objective. Perhaps this new attempt, based on language, will succeed. If so, it must be as the result of the combined efforts of the scientists and the 'philosophers of science'. This will require as a point of departure a pretty good mutual understanding of aims and methods. Bloomfield's discussion of language in relation to science is extremely interesting. I am not competent to express a critical opinion about his linguistics, but find his attitude toward science in general provocative. A scientist is naturally interested to read and hear how other people think he works and what they think he thinks he is trying to do.

In his discussion there are two aspects of the relation between linguistics and the rest of the sciences. First linguistics is a science itself falling 'between biology on the one hand and ethnology, sociology, and psychology on the other' (55). In addition, as a sort of metastructure, it comes to be the embodiment of all science. He uses both ideas without always clearly distinguishing between them, which results in some ambiguity. Similarly mathematics is referred to sometimes as a science and sometimes as a language of science.

There is an engaging and disarming manner here of avoiding what would seem essential discussion by simple and unqualified statements. Presumably there is a lack of space for elaborate expansion: 'The writer can only do his utmost to speak plainly, in the hope that the reader will read attentively' (4). It must be admitted that the result gives an assuring appearance of exceptional clarity of thought. One who has given it some consideration may be surprised, for example, to find the problem of what science is solved so simply. Science is a form of behavior. But also 'linguistically as well as in handling, science is a public activity' (47). If it is true that science is a form of behavior, it must be what the scientist does; that this is essentially private is the opinion of many working scientists. See especially the discussion by Bridgeman at the Fifth International Congress for the Unity of Science (Cambridge, Mass., 1939). It is true that what the scientist finally delivers becomes public, but that is only the fruit of his labor. Certainly until we have a much clearer insight into the nature of induction than we have at present, it would be a rash man who would claim that that important aspect of the scientist's activity is public.

At any rate, by such statements Bloomfield seems to have constructed something that he calls science, and which fits into his discussion. But the science so constructed is not readily recognized by the scientist. Some of the difficulties the scientist finds may be presented in the form of a discussion of selected statements.

'The accumulation of scientific results (the "body" of science) consists of records of speech utterance' (1). While this is true of protocols of experiments and of tables of data, it can hardly be denied that many of the most important records of science are pictures and models, or actual specimens in museums.

'The use of language in science presupposes complete stability in habits of speech' (3). Anyone familiar with the history of thought might take issue with that. Science has developed continuously from its early origins, but one could hardly say that there has been 'complete

stability in habits of speech' in scientific discourse since the days of the early Egyptians. In discussing the difficulties of translating Lamarck's Philosophie Zoologique into modern English, Elliot has an illuminating paragraph indicating the change of habits of speech in less than 150 years, concluding, 'We find ourselves in the presence not merely of one or two ideas that are new and therefore difficult to us; but we are surrounded on all sides by strange and unfamiliar conceptions, embodied in a language that is modelled on a scheme we have never heard of' (xxiv). Science and language are both products of an evolutionary process, and must continue to develop. To regard either as stable would be a great mistake. If the language of science envisaged by the Unity of Science movement is to be an inflexible one, it will be of little use in the part of science most interesting to scientists.

'In scientific speech definition implies complete interchangeability of the new term with the old; if this is not agreed upon, we cannot develop the kind of dialect that serves in scientific use' (51). Such a rigid and logically perfect concept of definition might be workable in an inactive field of science. But at the 'growing points' where ideas are in a state of flux, and incompletely verbalized, it does not work. The term *mitochondria*, for example, was first introduced as a formally defined term. But with the discovery of further facts about these bodies, the definition has expanded and lost its precision, until now simple definition is impossible. Eventually we may know enough to formulate a new and precise definition; the task is not, however, one of linguistics but rather one of further observation and experiment, in short, of scientific discovery. It is of course possible to give simple verbal identifications of any term but this is not final definition. The only definition we have at present of many terms is the sum total of our knowledge of what they represent and that is constantly growing.

'It is the task of science to provide a system of responses which are independent of the habits of any person or community. ... In the nature of the case, however, the entire result is transmitted and preserved in a verbal record' (31). Some such idea was behind the work of the early taxonomists in their attempts to describe species verbally. Linnaeus used no illustrations in his Systema Naturae; he hoped to make the verbal ·descriptions sufficient. Taxonomy bogged down in a quagmire of synonymy. Fortunately the fallacy was discovered and today the result of taxonomic research is transmitted and preserved wherever possible as type specimens deposited in museums. The verbal records are merely auxiliaries. We need them for efficiency but they

are not the real record.   If species were fixed as Linnaeus thought, and
if we had them all, and if there were not too many, we might be able
to accomplish the task he attempted.   But species are not immutable
and over a million are known.   The very idea of species is fuzzy, i.e.
not simply and clearly definable.

'Any system of gestures or signals that goes beyond vague beckoning
appears simply as an outgrowth and substitutive reproduction of lan-
guage' (8).   '. . . in man as we see him, all handling actions which bear
elaborate communicative value owe this value to their biosocial sub-
jection to language' (9).   Possibly I have read too much into Bloom-
field's statements but it may be inferred that he believes that all
communication between individuals is by language or by devices which
are outgrowths or substitutive reproductions of language.   The possi-
bility is too lightly dismissed that there may be other and important
methods of transmitting ideas.   That I have not wholly misunderstood
him is clear from his suggestion (12) that mind is really non-existent:
it is actually language that accomplishes what we have attributed to
mind; thinking is merely short-circuited (inner) speech (17).   From this,
if one believes as Bloomfield apparently does that the world of science
is an ideal world, language comes to occupy a peculiarly exalted posi-
tion.   All the contents of the 'mind', as well as its products including
science and the scientific world itself, are encompassed by language.
As Eric Bell has pointed out in Jastrow's Story of Human Error, mathe-
maticians have thrived on a similar exalted opinion of their subject
from the time of Pythagoras, and science has profited accordingly.

It seems worthy of emphasis that the direction of growth of mathe-
matics has been determined to a large extent by the scientists who
wanted to use it, and great contributions to its growth have been made
by scientists who have learned the methods of the mathematician.   One
might anticipate a similar method of growth of scientific language.
The linguist must first however make clear to the scientist how this
specialized dialect can be used and then how to construct it to serve
his needs.   To do this the linguist must have some idea how the work
of science is actually done, not how in some ideal system it ought to be
or might be done.

That Bloomfield is not without insight into the activity of the
scientist, is displayed on p. 49: 'Most scientific investigations are born
with the makeshift help of informal methodology rather than with the
professional guidance of formal logic'.   An unbiased observer might
well ask: Should this be changed?   Or would a study of what is meant

by the makeshift help of informal methodology prove at least as fruitful as the study of formal logic? It seems that there may be another type of naïveté than that involved in 'naïve solipsism' (14); this is the naïveté of the scientist who without any reference to a Weltanschauung or system of thought seeks only a simple answer to the problem that puzzles him. This was the naïve point of view of Archimedes, Leonardo da Vinci, Faraday, and a host of lesser workers. It is in fact the most fruitful point of view in scientific discovery. Some people do find their research problems through the device of constructing systems, but most find them in a much simpler and apparently haphazard way. If discovery is one of the purposes of science this type of naïveté is certainly excusable.

Of course systems are important, not only to suggest problems but to bring order out of the chaos of scientific discovery. But the whole of science has never yet been brought into a single system. Any device, like mathematics, that is partially successful is valuable. If a scientific language or symbolic logic can accomplish more it will be of enormous importance. We should be careful, however, not to lose sight of the possibility that the whole of science may never be unified, for there may be no fundamental unity in nature that we are able to grasp. Unless we allow for this possibility we will always be in danger of calling some things unscientific which in the eyes of all but the system makers are perfectly scientific. Bloomfield would certainly and justly claim that linguistics is a science; but would he claim that it can ever be expressed in 'the most characteristic and powerful form of the language of science—mathematical discourse'?

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THE BURUSHASKI LANGUAGE. By Lt. Col. D. L. R. LORIMER. Vol. 1: Introduction and grammar; pp. lxiv + 464 with 11 plates and map. Vol. 2: Texts and translations; pp. viii + 418 with 1 plate. Vol. 3: Vocabularies and index; pp. xvi + 548. (Instituttet for Sammenlignende Kulturforskning, Serie B, 29.1, 2, 3.) Oslo: H. Aschehoug (W. Nygaard), 1935, 1935, 1938.

THE ḌUMĀKI LANGUAGE: OUTLINES OF THE SPEECH OF THE ḌOMA,

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[1] [Dr. Wilson is Associate Professor of Biology at Brown University. Although it is the policy of LANGUAGE to accept contributions only from members of the Linguistic Society, it seemed desirable to make an exception in the present case in order that linguists might have the judgment of a natural scientist on Bloomfield's work.—B.B.]

or Bērīcho, of Hunza. By Lt. Col. D. L. R. Lorimer. (Comité International Permanent de Linguistes: Publications de la Commission d'Enquête Linguistique 4.) Pp. xvi + 244. Nijmegen: Dekker & van de Vegt N. V., 1939.

Language hunting in the Karakoram. By E. O. Lorimer. Pp. 310 with plates and map. London: George Allen & Unwin Ltd., 1939.

Colonel Lorimer has done us in the first work the immense service of giving us the first description which can lay claim to fulness and accuracy, of the isolated language known as Burushaski. It is spoken in its eastern dialect by some 20,000 speakers, in two minimally different varieties, those of Hunza and Nagir, in the two states of Hunza and Nagir north of Kashmir, in the extremely difficult mountainous area where Indian territory, Afghanistan, and Chinese Turkestan meet. To the west of this dialect some 8,000 people speak the other dialect of Burushaski, known as Werchikwār. The author was for some years Political Agent of the Indian Government at Gilgit and spent his spare time in linguistic work. Burushaski field-work was his avocation for over a year (1923–4); the three volumes under review represent the abundant fruits of this period. The results of a later visit to the country in 1934–5 for the specific purpose of doing linguistic field-work have not yet been published, and have contributed something only to the third volume of this work, in a way to be mentioned below.

Burushaski was previously known mainly from two grammatical sketches, those of Biddulph (1880, revised 1884) and Leitner (1889, based on Biddulph), and from the summary based on these and printed in the Linguistic Survey of India 8.2.551–67. These accounts have now been superseded entirely by Colonel Lorimer's work. In addition to this work, the author has published several papers on the language, which may conveniently be listed (so far as they have been discovered by the reviewer): A Burushaskī Text from Hunza, in BSOS 4.505–31 (1926–8); Nugae Burushaskicae, in BSOS 8.627–36 (1935–7); Burushaski and its Alien Neighbours: Problems in Linguistic Contagion, in Transactions of the Philological Society 1937.63–98. The only addition that I know to this bibliography is a paper by the Indian linguistic scholar Siddheshwar Varma, Burushaski Texts, in Indian Linguistics 1.5–6.6–32 (1931), in which the story of the north wind and the sun is given with important notes on phonetics, morphology, and syntax (reference will be made later to this paper).

The variety of Burushaski to which Lorimer's work is devoted is that of Hunza. That of Nagir is represented by notes (1.407–21) based on

material collected by his wife; Siddheshwar Varma's paper also gives some information about this variety, which is very little different from the former.   The Werchikwār dialect, somewhat more distant from the other two, is represented in Lorimer by notes (1.422-52), texts (2.400-15), and vocabulary (3.394-417, 520-7), based on a very short period of work; he refers to these as supplementing a sketch in Russian by I. I. Zarubin (Vershikskoe Narechie Kandzhutskogo Yazïka; Zapiski Kollegii Vostokovedov 2.2; Izd. Akademija Nauk SSSR; Leningrad, 1927; 275-364).   On the relations between the dialects, we find a statement by Lorimer (Trans. Phil. Soc. 1937.72) to the effect that, where it differs from either of the other two, Werchikwār agrees with Nagir Burushaski rather than with that of Hunza, and one by Siddheshwar Varma (9) that the Hunza dialect has a 'later' vowel-system than the Nagir dialect.   The Hunza dialect is apparently somewhat given to innovations.   Some attempt has been made by Lorimer to set up phonetic correspondences between Burushaski and Werchikwār (1.423-4), but the material appears to offer very little hope of any reconstruction of an ur-Burushaski.

In a preface to Vol. 1, Morgenstierne offers some very suggestive comments (xii–xix) on attempts to connect Burushaski with other linguistic stocks.   It is quite clear that there is no connection with the surrounding Indo-iranian, Turkish, and Tibetan languages.   Connection with Dravidian also seems impossible, and an attempt by Barbour (JAOS 41.60-72) to connect it with Munda resulted in a non liquet. The direction in which most effort has been expended has been Caucasian.   Marr laid it down that there is relationship, but without attempting proof, and was followed by Zarubin.   R. Bleichsteiner (Wiener Beitr. z. Kulturgeschichte u. Linguistik 1.289-331) accepted Marr's view and attempted proof.   Morgenstierne examines the offered evidence and finds, as we might expect considering the present state of comparative Caucasian studies, that bits of evidence have been drawn indiscriminately from all, or practically all, of the Caucasian languages on the basis of what are probably chance coincidences or resemblances, an outmoded comparative method which Morgenstierne shows would allow of equally close relationship between Burushaski and Ewe of West Africa.   This is not to say that one can deny relationship between Burushaski and the Caucasian languages; no such negation is possible in linguistic studies of this kind, but in the absence of convincing 'phonetic laws' (which are absent in Bleichsteiner's work) the relationship cannot be taken seriously.   Burushaski is still an isolated language.

Colonel Lorimer very modestly states that his work is an amateur effort (1.lxi), but his description of his field methods (1.lvi–lxii) leaves no doubt that he had little to learn here from the professionals, apart from the field of phonetics and some of the very latest developments in phonemic and morphophonemic analysis. The grammar can be said safely to be one of the best 'amateur' efforts that has ever appeared in linguistics, and is marked by acuteness both of recording and of analysis. This general excellence leads one to apply to it as searching a criticism as would be applied to the work of a 'professional'. The criticisms that follow are to be understood as negating in no way the general impression of excellence.

The two chief faults in the grammar are precisely in the fields where Colonel Lorimer disclaims, or would disclaim, training, viz. in phonetics and in the latest developments in phonemics and morphophonemics. This is especially unfortunate since it is on these that a great deal of the subsequent minute morphological analysis must rest, especially in a language with such complications of morphology as Burushaski has. The author found it difficult to distinguish phonetically between dental and retroflex stops, sibilants, and affricates (and it is clear that the two series are phonemically distinct in the language), and to record what seems from the description to be a retroflex spirant phoneme (written y; cf. Morgenstierne's note on this phoneme, xxviii). He also found it impossible to distinguish accurate' · between the apparently phonemically distinct aspirated and non-aspirated voiceless stops and affricates. His field-trip in 1934–5 was spent in part in clearing up these two points and the results have been incorporated in the vocabularies in Vol. 3, though only in the heading-words of entries and not in the illustrative quotations. The ambiguities resulting from the initial failure in recording still exist in the grammar and to some extent vitiate the statement of some important morphophonemic operative rules (e.g. 1.11, rule IIb). Apart from these two points of ambiguity it seems that the phonemic system of the consonants is well worked out. The vowel-system however is much more difficult to see through. Lorimer made no attempt to phonemicize here, and Morgenstierne's attempt (1.xxv–xxvi) results in a very peculiar set of phonemes (a, e, i, o, u, a·). Siddheshwar Varma (9–10) recorded significant tones, which Lorimer neglected entirely, and it may be that a thoroughgoing recording and working out of the tones would straighten out satisfactorily the knotty problem of vocalic lengths, as well as the problem of the stress accent. Constellation phonemics has been handled satisfactorily for the consonants, but not at all for the vowels.

The morphophonemic treatment which the language very obviously needs has been done in part. The author was forced by the extensive use of prefixes and suffixes with many obscuring morphophonemic replacements to set up morphophonemic formulas. Unfortunately, only a few of the operative rules have been collected in one place (1.10–1); most of the others are scattered through the morphological section and it is difficult to get a clear picture of the changes. We might ask too for a more searching analysis at many points, while recognizing that much acute analysis has been done and that a command of the most refined technique of morphophonemic analysis would have been necessary for the final steps.

In the difficult morphological analysis we can have only admiration for the general excellence of the author's results. It would be tempting to mention many of the interesting phenomena of the language, but one or two must suffice. In the nouns there is a system of four genders with extensive concordance in the pronominal references of the verb. The classes are male human beings, female human beings, and two classes including between them all inanimate objects, one of them including also non-human animate beings. The author wisely denotes these two classes by the symbols x and y, pointing out where he can what principles of meaning seem to operate in determining the class to which any noun denoting an inanimate object is to be assigned. He was unable to discover any single factor determining such inclusion, and Siddheshwar Varma, who gives a meaningful label to the x class (13–8) and indulges in anthropological speculations on the significance of the label, is clearly going beyond what the facts allow. It seems plain that x and y are formal gender classes of the familiar type seen in French, and consequently so are the other two classes, even though it is possible to give them a meaning. But the concordance system still needs both field-work and study, for Siddheshwar Varma found that in some cases when a y noun is subject of a transitive verb, the verb assumes an x form, and Lorimer on rechecking found that this is indeed true, but also that there are unexplained exceptions to this type of concordance.

The verb system is highly complex. One of its most interesting features is that, beside universal pronominal reference by means of suffixes, some verbs (but not nearly all!) have pronominal prefixes as well. When the verb is 'intransitive', the reference of the prefix as well as of the suffix is to the subject; when it is 'transitive', the suffix refers to the subject, the prefix to some other element of the predication,

usually direct or indirect object. This identity of affixes for the subject of an intransitive verb and the object of a transitive verb is found in many languages. But the Burushaski situation is very peculiar, in that apparently many verbs called 'transitive' by the author do not take the prefixes referring to the direct object. More searching analysis would have been welcome here, and it may be that the classification into transitive and intransitive is valueless for the language. We seem to have a dichotomy into non-prefixing and prefixing verbs (with some verbs showing forms of both classes), and in the latter class a further dichotomy into those in which the prefix and the suffix have the same reference and those in which they have a different reference. This would appear to be the first, formal step in the analysis; whether functions could then be assigned is a matter that could only be determined by painstaking study of the material de novo.

The study of the syntax, with accurate determination of the 'parts of speech' on the basis of both morphology and syntax, has not been carried very far by the author. Thus he has doubts about his adjective class, and it is probable that very little further study would have determined him that there is no such class different from that of nouns.

The three volumes contain an enormous mass of good linguistic material. If it were not for the faults that we have discussed in the phonetic recording, it would be possible for the student to make his own analysis with as much refinement of technique as he pleased. Unfortunately, as we said above, it is on accurate phonetic recording that all subsequent analysis must rest, and the work, in spite of its many excellences, suffers just here. But we are grateful to Colonel Lorimer for all that he has given us; Burushaski is provided with a much better description than many better known languages of the world.

Of the second work listed at the head of this review little need be said. The Ḍoma of Hunza are a reminder (along with the linguistic one provided by the luxuriance in Burushaski of retroflex phonemes) that we are still, in this remote corner, in a country which is part of India in a linguistic and cultural sense, as well as in the political one. They are, in a casteless Mohammedan territory, a caste of iron-workers and musicians of low social status, a phenomenon familiar all over India. And, again as generally in India, they have a caste-language which they speak at home and which is different from the Burushaski that they use in communicating with their neighbors. It is an Indo-aryan vernacular which had not been reported previously. In this volume Colonel Lorimer gives us the analysis of the small amount of material which time allowed him to collect after he had discovered this language almost by accident.

The third work listed is by Mrs. Lorimer, who accompanied her husband in his trips to the Burushaski country, did some of the preliminary linguistic work, and has here given an account of the 1934–5 field-trip. The book is of great ethnological value, since it furnishes us with a description of a full year in the life of the community. It has little of value for the linguistic student in spite of the title, but Chapter 25 on learning an unknown language is a very sound summary account of how the linguistic student sets about his field-work and of his mental attitude to the subject of his study. If the layman, especially the English colonial and imperial administrator, who more than anyone else is likely to read the book with close attention, is brought to an interest in linguistic work by this chapter, the book has been from our point of view well worth the writing.

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Vom Bilde zum Buchstaben: Die Entstehungsgeschichte der Schrift. By Kurt Sethe, with a contribution by Siegfried Schott. (Untersuchungen zur Geschichte und Altertumskunde Ägyptens 12.) Pp. viii + 84, with 2 plates. Leipzig: Hinrichs, 1939.

In the present volume we have a series of lectures on the 'Entstehungsgeschichte der Schrift', which were prepared by the late Professor Sethe in 1922 and gradually expanded as he repeated them four times (from 1928 to 1934) at the University of Berlin. Sethe's Nachlass was turned over by his family to Prof. H. Kees of Göttingen and the details of editing it for publication were put into the hands of Sethe's pupil, Dr. Siegfried Schott.

Since the material contained in these lectures has now become familiar, thanks in large part to Sethe's own studies elsewhere, and since it covers a great deal of territory (Chinese, Mexican, etc.), in which he was not at home, one can hardly be surprised to find little that is new or that has original significance. In fact, since the ground has been so fully covered by the recent books of Jensen and Diringer (to which Schott refers constantly in the footnotes which he has added to the text), one can hardly help but wonder why the book was published at all. Of course, Sethe's philological contributions to Egyptology have been so outstanding that one must be grateful for the slightest additions to them, even when they are so inadequately documented as is the case here. The reviewer finds himself almost throughout in agreement with the author, except where subsequently discovered data have materially altered the picture. The date of the adaptation of Egyptian

hieroglyphic signs to the purposes of a Semitic alphabet must probably be raised, since recent finds in Palestine show that the characters employed there as early as the 17th century B.C. were more (not less) hieroglyphiform than the characters on proto-Sinaitic inscriptions of about the 18th century. In other words, the latter were probably cursive forms of a monumental script known from a few examples of Palestinian provenience. This script may have been invented in Palestine in the last centuries of the third millennium, i.e. about the time that the syllabic script of Byblus was in use further north.

Dr. Schott's Nachwort describes the origin of Sethe's lectures and the methods which he employed in preparing the material for press. He also corrects some of Sethe's obiter dicta and exerts himself to modify the impression of unilinear evolution left by Sethe's somewhat over-simplified remarks. Schott writes an uncommonly obscure and allusive German, and often traverses a sinuous route in expressing his objections to Sethe. Since the latter writes with remarkable clarity and simplicity, the contrast is not to Schott's advantage. As a matter of fact, Schott is not entirely wrong in his mystifying remarks (78) about the weaknesses of Sethe's Geschichtsauffassung, which was too simple and direct, and which laid too much stress on constant change for the simpler and better, according to the positivistic principles of evolutionary causation. But current German opposition to 'positivism' often assumes such strange and such anti-intellectual forms that one cannot applaud the growing tendency to escape from it into a world of mystification.

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W. F. ALBRIGHT

THE JOHNS HOPKINS UNIVERSITY

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NOTES

THE COMMITTEE IN CHARGE OF RAISING FUNDS for the endowment of the Linguistic Institute had, on October 21, transmitted to the Treasurer of the Society the sum of $894.95. This does not include $1007 pledged for future payment.

E. ADELAIDE HAHN was the official delegate of the Linguistic Society to the celebration by Hunter College of its 70th birthday, the dedication of the New Building, and the inauguration of George N. Shuster as fifth president, on October 8–11, 1940.

THE FOLLOWING HAVE BEEN ELECTED TO MEMBERSHIP in the Linguistic Society of America subsequent to the last published list and up to September 24, 1940:

ADOLF, HELEN, Ph.D., Teacher of Latin, Foxcroft School, Middleburg, Va.; *Germanic linguistics.*

AKHVLEDIANI, T. S., Ul. Perovskoj 14, Tbilisi, SSSR.

ATKINS, SAMUEL DE COSTER, Ph.D., Instructor in Classics and Sanskrit, Princeton University; 28 Edwards Place, Princeton, N. J.

BOODBERG, PETER ALEXIS, Ph.D., Associate Professor of Oriental Languages, University of California, Berkeley, Calif.; *Chinese, cuneiform.*

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DOBBIE, ELLIOTT VAN KIRK, Ph.D., Instructor in English, Columbia University; Philosophy Hall, Columbia Univ., New York City.

MALKIEL, YAKOV, Ph.D., 306 W. 109th Street, New York City; *Romance and general linguistics.*

MORRISON, LEE HENRY, Editorial Assistant, Columbia University Press; 540 W. 123d Street, New York City; *Mexican Spanish.*

PARYSKI, MARIE E., M.A., 1063 W. Woodruff Ave., Cleveland, Ohio; *Coptic, Egyptian.*

ROSE, JESSE LEE, Ph.D., Instructor in Latin, Duke University; 603 Watts St., Durham, N. C.; *Greek, Latin.*